Community Utilities of Pennsylvania Inc. filed Supplement No. 9 to Tariff Water PA PUC No. 1	Docket Nos.: R-2021-3025206 R-2021-3025207
Community Utilities of Pennsylvania Inc. filed Supplement No. 9 to Tariff Water PA PUC No. 1 which is a general rate increase with an effective date of June 12, 2021 Call-In Telephonic Evidentiary Hearing	

Pages 260 - 273

Judge's Chambers
Keystone Building
400 North Street
Harrisburg, PA
September 8, 2021
Commencing at 9:50 a.m.

INDEX TO EXHIBITS

Docket Nos. R-2021-3025206, R-2021-3025207
Hearing Date: September 8, 2021

NUMBER	FOR IDENTIFICATION	IN EVIDENCE
Joint Exhibit:		
1 CUPA, I&E, OSBA and OCA Exhibits	266	267
(CUPA EXHIBIT PB-2R CONFIDENTIAL)		
(CUPA EXHIBIT PB-3R CONFIDENTIAL)		
(CUPA EXHIBIT PB-2R CONFIDENTIAL)		
(CUPA EXHIBIT PB-3R CONFIDENTIAL)		

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025206
	:	
Community Utilities of Pennsylvania Inc. – Water Division	:	
	:	
Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025207
	:	
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

Joint Hearing Exhibit 1 Identifying Testimony for Admission into Record

WATER – R-2021-3025206

DIRECT

PARTY	WITNESS	DOCUMENT NAME
CUPA	J. Bryce Mendenhall	CUPA W Statement No. 1, no exhibits
CUPA	Perry Brown	CUPA W Statement No. 2 and CUPA W Exhibit PAB-1 to PAB-2
CUPA	David Clark	Errata CUPA W Statement No. 3 and CUPA W Exhibit DMC-1 to DMC-2
CUPA	Andrew Dickson	CUPA W Statement No. 4 and CUPA W Exhibit AWD-1 to AWD-2
CUPA	Dylan D'Ascendis	CUPA W Statement No. 5, Appendix A, and CUPA Exhibit DWD Schedules DWD-1 to DWD-8
CUPA	Scott Miller	CUPA W Statement No. 6 and Exhibits CUPA W Ex SAM-1 to SAM-2
OSBA	Brian Kalcic	OSBA Statement No. 1, Appendix, Referenced Interrogatories, and Exhibit BK-1
I&E	Zachari Walker	I&E Statement No. 1 and I&E Exhibit No.1, Schedules 1-9
I&E	Christopher Keller	I&E Statement No. 2 and I&E Exhibit No. 2, Schedules 1-14
I&E	Esyan A. Sakaya	I&E Statement No. 3 and I&E Exhibit No. 3, Schedules 1-4
OCA	Stacy L. Sherwood	OCA Statement No. 1 and Appendices A & B, Schedules

		SLS-1 to SLS-14
OCA	Noah D. Eastman	OCA Statement No. 2, Appendix A, and Exhibits NDE-1 to NDE-4
OCA	Jerome D. Mierzwa	OCA Statement No. 3, no exhibits
OCA	Terry L. Fought	OCA Statement No. 4, Appendix A, and OCA Exhibits TLF-W1 to TLF-W9 and TLF-WW1 to TLF-WW3

REBUTTAL

PARTY	WITNESS	DOCUMENT NAME
CUPA	J. Bryce Mendenhall	CUPA W Statement No. 1-R and Mendenhall Exhibit No. 1
CUPA	Perry Brown	CUPA W Statement No. 2-R (Public) and CUPA W Exhibit No. PB-1R to PB-3R
CUPA	Perry Brown	CUPA Exhibit Nos. PB-2R and PB-3R (Confidential)
CUPA	David Clark	CUPA W Statement No. 3-R, no exhibits
CUPA	Andrew Dickson	CUPA W Statement No. 4-R and CUPA W Rebuttal Exhibits AWD-1R to AWD-8R
CUPA	Dylan W. D'Ascendis	CUPA Statement No. 5-R and Schedules DWD-1R to DWD-8R
CUPA	Emily Long	CUPA Statement No. 7-R and CUPA W Exhibit No. EL-1R to EL-4R
CUPA	LaQuisha M. Parks	CUPA Statement No. 8-R and Parks Rebuttal Exhibit 1
CUPA	Steven M. Lubertozzi	CUPA Statement No. 9-R, no exhibits
OCA	Jerome D. Mierzwa	OCA Statement 3R, no exhibits

SURREBUTTAL

PARTY	WITNESS	DOCUMENT NAME
OCA	Stacy L. Sherwood	OCA Statement 1SR and Appendix A, Schedules SLS-1SR to SLS-8SR, SLS-11SR to SLS-14SR
OCA	Noah D. Eastman	OCA Statement 2SR, no exhibits
OCA	Jerome D. Mierzwa	OCA Statement 3SR, no exhibits
OCA	Terry L. Fought	OCA Statement 4SR, no exhibits
OSBA	Brian Kalcic	OSBA Statement No. 1-S and Exhibit BK-1S
I&E	Zachari Walker	I&E Statement No. 1-SR and Exhibit No. 1-SR, Schedules 1-2

I&E	Christopher Keller	I&E Statement No. 2-SR, no exhibits
I&E	Esyan A. Sakaya	I&E Statement No. 3-SR, no exhibits

REJOINDER

PARTY	WITNESS	DOCUMENT NAME
CUPA	Perry Brown	CUPA W&WW Statement No. 2-RJ and CUPA Exhibit PB-1RJ
CUPA	Andrew Dickson	CUPA W Statement No. 4-RJ, no exhibits
CUPA	Dylan W. D'Ascendis	CUPA Statement No. 5-RJ, no exhibits
CUPA	Emily Long	CUPA W&WW Statement No. 7-RJ, no exhibits

WASTEWATER – R-2021-3025207

DIRECT

PARTY	WITNESS	DOCUMENT NAME
CUPA	J. Bryce Mendenhall	CUPA WW Statement No. 1, no exhibits
CUPA	Perry Brown	CUPA WW Statement No. 2 and CUPA Exhibit Nos. PB-1 and PB-2
CUPA	David Clark	Errata CUPA WW Statement No. 3 and CUPA WW's Exhibit Nos. DMC-1 and DMC-2
CUPA	Andrew Dickson	CUPA WW Statement No. 4 and CUPA WW Exhibit Nos. AWD-1 and AWD-2
CUPA	Dylan D'Ascendis	CUPA WW Statement No. 5, Appendix A, and CUPA Exhibit DWD Schedules DWD-1 to DWD-8
CUPA	Scott Miller	CUPA WW Statement No. 6 and CUPA WW Exhibits SAM-1 and SAM-2
I&E	Zachari Walker	I&E Statement No. 1 with I&E Exhibit No. 1, Schedules 1-7
I&E	Christopher Keller	I&E Statement No. 2 with I&E Exhibit No. 2, Schedules 1-10
I&E	Esyan A. Sakaya	I&E Statement No. 3 with I&E Exhibit No. 3, Schedules 1-12
OCA	Stacy L. Sherwood	OCA Statement No. 1 and Appendices A & B, Schedules SLS-1 to SLS-14
OCA	Noah D. Eastman	OCA Statement No. 2, Appendix A, and Exhibits NDE-1 to NDE-4
OCA	Jerome D. Mierzwa	OCA Statement No. 3, no exhibits

OCA	Terry L. Fought	OCA Statement No. 4, Appendix A, and OCA Exhibits TLF-W1 to TLF-W9 and TLF-WW1 to TLF-WW3
OSBA	Brian Kalcic	OSBA Statement No. 1, Appendix, Referenced Interrogatories, and Exhibit BK-1

REBUTTAL

PARTY	WITNESS	DOCUMENT NAME
CUPA	Perry Brown	CUPA WW Statement No. 2 (Public) and Exhibits PB-1R to PB-3R
CUPA	Perry Brown	CUPA Exhibit Nos. PB-2R and PB-3R (Confidential)
CUPA	David Clark	CUPA WW Statement No. 3 and Exhibits DMC-1R and DMC-2R
CUPA	Andrew Dickson	CUPA WW Statement No. 4 and Exhibit No. AWD-1R
CUPA	Dylan W. D'Ascendis	CUPA Statement No. 5-R and Schedules DWD-1R to DWD-8R
CUPA	Emily Long	CUPA Statement No. 7-R and CUPA W Exhibit No. EL-1R to EL-4R
CUPA	LaQuisha M. Parks	CUPA Statement No. 8-R and Parks Rebuttal Exhibit 1
CUPA	Steven M. Lubertozzi	CUPA Statement No. 9-R, no exhibits
OCA	Jerome D. Mierzwa	OCA Statement 3R, no exhibits

SURREBUTTAL

PARTY	WITNESS	DOCUMENT NAME
I&E	Zachari Walker	I&E Statement No. 1-SR and Exhibit No. 1-SR, Schedules 1-2
I&E	Christopher Keller	I&E Statement No. 2-SR, no exhibits
I&E	Esyan A. Sakaya	I&E Statement No. 3-SR, no exhibits
OCA	Stacy L. Sherwood	OCA Statement 1SR and Appendix A, Schedules SLS-1SR to SLS-8SR and SLS-11SR to SLS-14SR
OCA	Noah D. Eastman	OCA Statement 2SR, no exhibits
OCA	Jerome D. Mierzwa	OCA Statement 3SR, no exhibits
OCA	Terry L. Fought	OCA Statement 4SR, no exhibits
OSBA	Brian Kalcic	OSBA Statement No. 1-S and Exhibit BK-1S

REJOINDER

PARTY	WITNESS	DOCUMENT NAME
CUPA	Perry Brown	CUPA W&WW Statement No. 2-RJ and CUPA Exhibit PB-1RJ
CUPA	Andrew Dickson	CUPA WW Statement No. 4-RJ, no exhibits
CUPA	Dylan W. D'Ascendis	CUPA Statement No. 5-RJ, no exhibits
CUPA	Emily Long	CUPA W&WW Statement No. 7-RJ, no exhibits

CUPA W STATEMENT NO. 1

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

DIRECT TESTIMONY

OF

J. BRYCE MENDENHALL

WATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Direct Testimony of J. Bryce Mendenhall (Water)

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A: My name is J. Bryce Mendenhall. I am the President of Community Utilities of Pennsylvania Inc. ("CUPA" or "Company"). My business address is 500 W. Monroe, Suite 3600, Chicago, Illinois 60661.

Q: **PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.**

A: As President I am responsible for all aspects of the Company's business culminating in the ongoing provision of safe drinking water and environmentally responsible wastewater service to all of our customers.

Q: **PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.**

A: I have been employed with the Corix Group of Companies since March of 2017. I graduated from Appalachian State University in 1993 with a degree in Geographic Information Systems (GIS) and Cartography and have been employed in the water and wastewater profession for twenty-eight years collectively. I worked for more than a decade as the Utilities Director for Franklin County, North Carolina and most recently served four years as the Vice President of Operations for Carolina Water Service of NC, Blue Granite Water Company, and Tennessee Water Service.

Q: **HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?**

A: No. However, I have testified before other state commissions including North Carolina, South Carolina, and Tennessee on topics of operations, capital projects, unaccounted for water and customer service.

Q: **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A: My testimony: (1) introduces the other witnesses who will testify in support of our requested rate relief; (2) provides background on the history and structure of CUPA; (3) explains why the rate relief requested by CUPA is necessary and reasonable; (4) briefly discusses the Company's response to Covid-19; and (5) discusses other aspects of our rate request, including capital projects.

WITNESSES

Q: **WHO ARE THE OTHER WITNESSES PRESENTING TESTIMONY IN THIS PROCEEDING?**

A: In addition to myself, CUPA's request for rate relief is supported by the following witnesses:

- Perry Brown, CUPA's Financial Planning and Analysis Manager will present consumption decline/usage normalization, miscellaneous revenue adjustments, uncollectible accounts adjustments, weighted ERC calculation, forecasted salaries/wages, pension/other benefits, and rate base valuation for assets of Pennsylvania Utility Company (Tamiment).
- David Clark, CUPA's financial analyst will present capital forecast, rate case expense, purchase power, chemicals, and maintenance.
- Andrew Dickson, Senior Financial Analyst will discuss rate design including the proposed low-income rate.

- Dylan D'Ascendis, Partner at Scott Madden Management Consultants will recommend a cost of common equity that the Company used in determining revenue requirements.
- Scott Miller, Partner at Baker Tilly Municipal Advisors will present a fully allocated cost of service study to show how the water and sewer revenue requirements are allocated to customer classes.

BACKGROUND

Q: **PLEASE DESCRIBE THE HISTORY OF COMMUNITY UTILITIES OF PENNSYLVANIA INC.**

A: CUPA is a Pennsylvania corporation and is a wholly owned subsidiary of Corix Regulated Utilities (US) Inc. ("CRUI")[1], formerly known as Utilities, Inc. ("UI"). CRUI is an Illinois corporation created and existing under the laws of the State of Illinois that owns more than 60 water and sewer utilities operating in 16 states, including CUPA. CRUI has been involved in the water and sewer industry for over 40 years and has approximately 300,000 customers. CRUI continues to provide CUPA necessary funding, and seasoned management through Water Service Corporation ("WSC") described below.

CUPA was incorporated in 2015 for implementation of the merger into a single entity of the three separate wholly owned Pennsylvania subsidiaries of UI that provided water and sewer services in Pennsylvania (the "constituent Pennsylvania utilities"). Those subsidiaries are Penn Estates Utilities, Inc. ("PEUI"), Utilities, Inc. of Pennsylvania

[1] Utilities, Inc changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

("UIP"), and Utilities, Inc. - Westgate ("UIW"). The merger was approved by the Commission's December 3, 2015 Order. Pursuant to the terms of the approved Agreement and Plan of Merger (the "Merger"), the constituent Pennsylvania utilities merged with and into CUPA, the surviving corporation. All of the common stock of the constituent Pennsylvania utilities was cancelled and retired and ceased to exist, and the separate corporate existence of each of the absorbed Pennsylvania utilities ceased. By operation of law, from and after the effective time of the merger all the assets, rights, powers, duties, obligations, liabilities and debts of the constituent Pennsylvania utilities transferred to and were assumed by CUPA. Under the approved Merger, the existing rates of each of the constituent Pennsylvania utilities remained in effect for the customers located in divisions of CUPA corresponding to the service areas formerly served by the constituent Pennsylvania utilities. As part of CUPA's 2016 rate case settlement at R-2016-2538660, the Commission approved reasonable steps towards unitization of rates between CUPA's water divisions as unitization is favored by the Commission. As part of CUPA's 2019 rate case settlements at R-2019-3008947 and R-2019-3008948, the Commission approved a full unitization of rates across CUPA's Water and Wastewater territories.

Additionally, the Pennsylvania Public Utility Commission in the matter of A-2018-3005430 issued a Certificate of Public Convenience on June 25, 2019 wherein CUPA acquired water and wastewater assets owned by Pennsylvania Utility Company (Tamiment).

CUPA provides water service to approximately 8,066 customers via (9) wells and more than 294,000 linear feet of water distribution mains. In addition, CUPA purchases bulk

water from the City of Bethlehem for some of its customers located in Hanover Township in Northampton County, Pennsylvania.

Q: **WHAT IS THE RELATIONSHIP OF CUPA AND CRUI AND HOW DOES THIS RELATIONSHIP BENEFIT THE COMPANY'S CUSTOMERS?**

A: As indicated, CUPA is a wholly owned subsidiary of CRUI. CRUI is unique in that for over 40 years its business has been owning and operating through WSC, smaller water and sewer companies. It is an advantage to CUPA to be part of an organization whose sole focus is on its type and size of operations. CRUI has the expertise needed in areas of importance to small water and sewer companies, such as in construction and engineering, accounting, data processing, billing and customer services, and regulation. Having its main focus on its water and sewer businesses, CRUI has the knowledge and ability to meet current challenges facing the water and wastewater industry.

Q: **PLEASE DESCRIBE WSC.**

A: WSC, like CUPA, is a wholly owned subsidiary of CRUI. WSC is a Service Company organization that is familiar with the business and property of CUPA (and the other regulated operating companies within the Corix group of companies) and experienced in the conduct, management, financing, construction, accounting, and operation of CUPA's water and sewer service businesses. WSC provides necessary services pursuant to a contract (the "Affiliated Interest Agreement" of "AIA") originally approved by the Commission pursuant to Docket No. G-2015-2512603. Pursuant to the Commission's June 25, 2019 Orders at Docket Nos. A-2018-3005430 & A-2018-3005432 (water) and A-2018-3005431 & A-2018-3005433 (wastewater), CUPA filed on November 22, 2019 an updated Affiliated Interest Agreement (AIA) under Docket No. G-2019-3014555.

CUPA received correspondence dated November 25, 2019 at the above referenced docket stating "the period for consideration of the Agreement filed November 22, 2019 is extended until further order of the Commission." The Commission has not yet issued a decision regarding the updated AIA.

Q: **WHAT IS THE RELATIONSHIP BETWEEN WSC AND CUPA?**

A: Like any large public utility, CUPA requires business and corporate services to operate and serve customers. CUPA receives those services from and through WSC. Specifically, WSC employs or provides personnel and the necessary resources to perform the services for CUPA per the AIA.

Q: **WHAT TYPE OF SERVICES DOES WSC FURNISH TO CUPA?**

A: The services that WSC furnishes to CUPA generally fall into the same categories of services that all public utilities require to operate and serve customers, such as executive governance, financial, treasury, accounting, legal, health and safety, environmental compliance, procurement, customer service, billing, human resources, employee benefits, payroll, and information technology services. The services that WSC provides CUPA through WSC employees, Corix executive leadership and other Corix personnel supervised by the Corix Executive Leadership Team and outside contractors, comprise a complete suite of the administrative and general services that CUPA needs to fulfill its public utility obligation to continuously provide safe and reliable water and wastewater services to Pennsylvania customers. If WSC did not furnish those services, CUPA would have to perform the services itself or procure from other service providers.

Q: **DO CUPA'S CUSTOMERS BENEFIT FROM THE COMPANY'S ARRANGEMENT WITH WSC?**

A: Yes. Specifically, in addition to the centralized expertise that the arrangement provides CUPA, CUPA's customers benefit from economies of scale and scope by CUPA's affiliation with a larger organization that can leverage the bargaining power of the entire Corix group of companies to achieve efficiencies that could not be achieved by a smaller company like CUPA on a stand-alone basis and that has better access to debt and equity capital markets than a smaller company. Further, the centralized delivery of common support services-the costs of which are shared among CUPA and other operating companies within the Corix family that benefit from the services-enables the services to be provided to CUPA and each operating company at a lower cost than if services were provided independently assuming replication of services on a smaller scale was possible.

RELIEF REQUESTED

Q: **ARE YOU FAMILIAR WITH THE TARIFF SUPPLEMENT AND SUPPORTING DOCUMENTATION CUPA FILED INITIATING THIS PROCEEDING?**

A: Yes. I have read them and am familiar with their contents.

Q: **PLEASE DESCRIBE THE CURRENT RATES AND CHARGES APPROVED FOR CUPA'S OPERATING DIVISIONS.**

A: The base rates and charges for CUPA's operating divisions were previously approved by the Commission's November 14, 2019 Order at Docket. No. R-2019-3008947.

Q: **PLEASE DESCRIBE THE RELIEF REQUESTED BY CUPA.**

A: CUPA is requesting an increase in base rates and charges to produce additional water revenue of $ 757,517. The specific rates and charges proposed by CUPA are discussed in greater detail by Andrew Dickson.

Q: **WHY IS THE COMPANY REQUESTING RATE RELIEF AT THIS TIME?**

A: CUPA realizes that the Covid-19 pandemic has resulted in significant economic hardship for our customers. CUPA also recognizes the importance of water and wastewater utility services during a public health emergency and appreciates the obligations that come with delivering a resource required for life and for which our customers have no other source. However, under present rates, CUPA is not able to meet its operating costs and earn a reasonable return on its investment. In order to continue providing these essential utility services, CUPA must have rates that allow it to continue to provide safe, adequate and reliable service. CUPA cannot defer capital investments, must continue to fairly compensate employees, and ensure it financial stability. Without appropriate rate relief, CUPA's ability to continue to provide environmentally safe, reliable, and efficient water and wastewater services to its customers and meet its financial obligations will be adversely affected. For the forecasted 12 months ended December 31, 2022, CUPA is projected to earn a 1.70% return on equity (ROE), which is far below the ROEs recommended by CUPA's cost of capital witness.

Q: **IS CUPA RECOMMENDING A CONSOLIDATED RATE STRUCTURE?**

A: Yes. In addition to the consolidation effort in the previous rate case, CUPA is proposing a consolidated rate structure to also include the most recently acquired Tamiment system f/k/a Pennsylvania Utility Company.

Q: **ARE THERE BENEFITS ASSOCIATED WITH A CONSOLIDATED RATE STRUCTURE?**

A: Yes, consolidated rates are commonplace in other regulated utilities like gas and electric. Consolidated rates will allow CUPA to spread capital costs over a larger base of

customers, which ultimately benefits all customers and can protect customers from rate shock. If a small standalone utility requires a significant capital improvement these costs can be spread over a larger base of customers. In the long-term, consolidated rates will strengthen CUPA and allow the customers to enjoy lower rates via fewer rate cases and lower rate case expense.

RESPONSE TO COVID-19 PANDEMIC

Q: **CAN YOU BRIEFLY ADDRESS WHAT ACTIONS THE COMPANY HAS TAKEN IN RESPONSE TO THE COVID-19 PANDEMIC?**

A: Yes. One of our first steps was to set up an Incident Command Structure to ensure all decision making was centralized and to ensure the safety of our employees and the communities that we serve. Below is a list of several measures CUPA has taken to address the impact of COVID-19 on utility operations and our customers:

1) Voluntary suspension of disconnects including an extension through June 30, 2021.
2) Voluntary reconnections for previously disconnected customers.
3) Implementation of bill pay assistance and more flexible credit and collection practices.
4) Critical inventories planning and review.
5) Workforce planning.
6) Facility Emergency Action Plans.

7) Suspension of all non-essential business travel – this suspension of business travel does not include regular, essential operational and field activities which can be performed using recommended social distancing measures.
8) Remote work and office closures – all company offices were closed to the public temporarily effective March 16th, 2020.
9) Cyber security precautions – company IT personnel have continued working to ensure employees are operating in a secure manner from home Wi-Fi networks through VPN access.
10) Essential Operations Continuity Planning.
11) Emergency security clearances for employee access to plants and facilities where movement was otherwise restricted.
12) Health and Safety guidance policies for operations staff, including:
    i. Social distancing policy;
    ii. Updated PPE guidance;
    iii. Vehicle maintenance guide;
    iv. Multiple employee task; and
    v. Critical contractor/visitor guidance.
13) Essential personal protective equipment.
14) Lone worker safety program.
15) Vaccine coordinators – this team assisted with tracking each county/states vaccine program to facilitate staff access for vaccination.

CAPITAL PROJECTS

Q: **PLEASE DESCRIBE THE COMPANY'S CAPITAL INVESTMENT PLAN (CIP).**

A: The Company's CIP is a rolling five-year plan that is based on the existing and anticipated needs of each water and wastewater system. This plan includes two distinct groups of spending: (1) non-project asset additions/replacements which include (a) asset additions/replacements and (b) capitalized time for asset additions/replacements; (2) projects, which include (a) engineering, equipment and construction costs, (b) capitalized time for project management and (c) interest during construction (IDC). The Company's internal guidelines require any capital investment cost which is greater than $50,000 or takes longer than 30 days to complete be treated as a project. Capital investments that do not meet these requirements are captured as non-project asset additions/replacements.

Q: **PLEASE DESCRIBE THE COMPANY'S CAPITAL PROJECT INVESTMENT BUDGETING AND FORECASTING PROCESS FOR PROJECTS.**

A: The project investment needs of CUPA's water and wastewater systems are determined by a variety of initiating events and informative drivers and are intended to continually improve service levels, comply with permit requirements, prevent health and safety issues, prevent asset failures, improve operator efficiency, reduce operating costs, and occasionally, to increase system capacity. These forward-looking capital projects are refined into the CIP, through collaboration between Operations, Operations Management, and Finance in conjunction with utilizing the Company's Asset Management Plan (AMP), which I describe in more detail below. Through utilizing the AMP, the Company can review existing asset conditions and their respective Consequences of Failure (CoFs)

and mitigation strategies to help evaluate and prioritize projects to determine the appropriate timing for further development and cost estimation.

In order to establish engineering, equipment, and construction costs for projects in the CIP, the Company utilizes its best available information, which could include engineering estimates, contractor bids, and internally generated estimates.

The capitalized time component of the project is calculated by multiplying the forecasted quantity of capitalized hours by our hourly cap time rate for Pennsylvania. Capitalized hours generally include project management and additional operations demands during completion of the project.

The IDC component of the project is calculated by multiplying the IDC rate in Pennsylvania by the forecasted, monthly, outstanding project balance.

Q: **WHAT IS THE PROCESS FOR EVALUATING POTENTIAL CAPITAL PROJECTS?**

A: Potential projects are identified typically from review of the AMP, focusing on the highest risk assets. As explained below, other justifications are considered for potential projects beyond risk. After potential projects are identified, they are evaluated and prioritized on a system-by-system basis by a team consisting of Operations and Finance. Projects are evaluated and prioritized by using the following criteria, in order of importance: (1) health, safety, and environment, (2) level of service (3) end of life, (4) capacity, and (5) efficiency.

Q: **HOW ARE CAPITAL PROJECTS SCHEDULED?**

A: The highest priority projects, as identified in the AMP or by other means, are generally scheduled soonest. The projects are evaluated to determine expected length for study,

design, permitting, and construction. The timing of projects is evaluated and adjusted to minimize scheduling issues and to ensure timing requirements and limitations are met. The Company reviews the recommendations of its outside engineers regarding when work should be completed. Scheduling is also adjusted to account for the capacity of the Operations team to manage multiple ongoing projects.

Q: **WHAT IS THE COMPANY'S ASSET MANAGEMENT PLAN?**

A: The Company engaged GHD Group (GHD), a consulting engineering firm, to assist with development of the Company's AMP for Tamiment, Penn Estates and UIP respectively. In general, the AMPs were developed using the United States Environmental Protection Agency (USEPA) Asset Management Framework.[2] Corix has implemented asset management company-wide, with each unit of the Company developing plans specific to their operations. The asset management framework is built around a body of leading practices that focus on seeking the lowest total lifecycle cost of ownership for infrastructure assets, while delivering services at a level customers and stakeholders require, at an acceptable level of risk to the organization and stakeholders. The AMP is intended for use as a central, living document or set of documents that helps articulate to the Company and stakeholders how assets are managed. The Company is committed to an AMP that will continue to develop and improve.

The Company has not yet developed a formal AMP for the Westgate water system. The Westgate water system is a purchased water system with few vertical assets. Regarding

[2] The USEPA Asset Management Framework documents are available online here: https://www.epa.gov/sustainable-water-infrastructure/asset-management-water-and-wastewater-utilities.

Westgate, replacements of the linear assets (water main) are generally replaced based on watermain break history or other service quality related issues.

Q: **HOW WILL THE COMPANY USE LUCITY TO MAINTAIN THE ASSET MANAGEMENT PLAN?**

A: The Company implemented the Lucity system in 2018. Lucity is an Operations Management System (OMS) that incorporates the Company's Geographic Information Systems (GIS) and Computer Maintenance Management Systems (CMMS). The Lucity system has several benefits including: (1) improved ability to access information and maintain information on assets, (2) improved customer service through real-time work orders and field activities, (3) improved line-of-sight on preventative maintenance, asset conditions, service levels and risk, and (4) better data to support decision-making through improved capital project identification, prioritization and justification.

Relevant to asset management, Lucity allows the Company to maintain the asset registry in a master database. Company staff, including operators and managers, can update asset conditions and other attributes from inspections, preventive maintenance, or other activities. Company staff can retire, replace, and add assets as needed, which allow all assets to be properly accounted for and updated, leading to a more accurate AMP. Documentation for assets, such as specification sheets, plans, and manuals, can be stored electronically and made readily accessible. Lucity allows for assignment of work orders and other reminders to ensure that preventive maintenance, inspections, and other activities are completed properly, on-time, and that a record is generated for any activities.

Q: **WHAT IS THE PROPOSED LEVEL OF CAPITAL PROJECT INVESTMENT REFLECTED IN THIS RATE FILING?**

A: CUPA's rate increase reflects approximately $ 1,757,031 in total capital expenditures in 2021 and 2022.

Q: **PLEASE DESCRIBE THE MAJOR PROJECTS PLANNED OR ONGOING WITHIN YOUR PENNSYLVANIA SYSTEMS WHICH ARE INCLUDED FOR RATE RECOVERY IN THIS FILING.**

A: The projects planned or ongoing within CUPA's systems included for rate recovery are described in the following sections. I will provide scope, justification, timing, costs, and current status for the major projects. Projects are summarized in the table below:

Capital Project	TOTAL WATER
Tamiment Glen Wells Rehab	$ 354,417
Tamiment Water Wellhouse 3 Rehab	$ 305,868
Tamiment Hydrant Rehab	$ 208,662
Westgate WMR2 Macada Rd	$ 854,653
Westgate Office Rehab	$ 33,431

Q: **PLEASE DESCRIBE THE "TAMIMENT GLEN WELLS REHAB" PROJECT.**

A: The project is comprised of two main components: (1) replacement/abandonment of Well #1 and (2) abandonment of Well #2.

<u>Well #1</u>

Well #1 was initially poised for rehabilitation efforts but upon further review of the Company's Asset Management Plan (AMP), consultation with GHD Engineering and Cresswell Drilling Co., the project scope was amended. Identified defects in the well structure and production constraints led to a recommendation to drill a new well. This

would include the installation of new casing, drop pipe, pump/motor, new electrical components and the abandonment of the existing well. Hydrogeological surveys conducted in May 2021 have shown promising results and test drilling is slated for June 2021.

Well #2

Well #2 is currently identified as 'abandoned' by the Pennsylvania Department of Environmental Protection (PADEP). Consultation with the Company's engineer of record indicate well rehabilitation would require substantial time and expense with the potential for limited water production and water quality concerns. In essence the Company would need to re-permit and reconstruct the well in the same geographic area. The Company's decision was to formally decommission and demolish the current well facilities and seek an alternative site in the future.

The Company plans to complete these project components by October 2022 recognizing a total project forecast cost of $354,417, including $328,889 in direct costs for engineering and construction, $4,852 cap time, and $20,676 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT WELLHOUSE 3 REHAB" PROJECT.**

A: The wellhouse is an aging wooden shed-type structure that will be replaced with block style construction including a reinforced foundation, and new electrical components. Replacing the structure will provide protection to the well and treatment assets along with removing operational safety hazards. The project also provides continuity of service via the installation of a 75kw MTU generator for emergency power as required by USSP regulations in Pennsylvania. Additionally, a water supply line will be installed to the wellhouse providing service for the operator's safety eyewash/shower station. Well #3 is

Tamiment's largest producer and this project bolsters distribution continuity along with operator safety.

Project completion is expected October 2021 with a forecasted total project cost of $305,868, including $293,750 in direct costs for engineering and construction, $4,043 for cap time, and $8,075 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT HYDRANT REHAB" PROJECT.**

A: The project will address approximately 83 defective hydrants identified during system inspections conducted by Roger's Hydrants Service. The project includes a combination of repairs and replacements, restoring hydrant functionality to support customer water quality through the Company's annual flushing program.

The project is scheduled to be completed August 2021 with a forecasted total project cost of $208,662 including $200,000 in direct costs for engineering and construction, $4,852 cap time, and $3,811 for IDC.

Q: **PLEASE DESCRIBE THE "WESTGATE MACADA RD WATERLINE REPLACEMENT" PROJECT.**

A: The project will replace approximately 2,000 LF of 4" cast iron water main with 6" PVC pipe along Macada Rd between Jackson Rd and Hidden Hills Dr. The new water main will include the installation of appropriately spaced fire hydrants for fire protection not provided by the existing line. Additionally, the project will enhance water quality with the removal of lead joint cast iron water main that has been in service beyond its useful lifespan. The existing water main has experienced numerous main breaks resulting in service interruptions. Engineering/Design is slated to begin June 2021 with project completion anticipated September of 2022.

The Company is forecasting a total project cost of $854,653 including $825,000 in direct costs for engineering and construction, $1,617 cap time, and $28,035 for IDC.

Q: **DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?**

A: Yes, however I reserve the right to supplement or make corrections to this testimony.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025206
Community Utilities of Pennsylvania Inc. – Water Division	:	
Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025207
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
J. BRYCE MENDENHALL
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, J. Bryce Mendenhall, hereby certify that I am the President, of the Community Utilities of Pennsylvania Inc. ("CUPA"), and that, in such capacity, I am providing testimony on CUPA's behalf.

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

For Community Utilities of Pennsylvania – Water Division

- Direct Testimony, CUPA W Statement No. 1 consisting of 18 pages of written testimony.
- Rebuttal Testimony, CUPA W Statement No. 1-R consisting of 18 pages of written testimony with accompanying exhibits:
    - Mendenhall Rebuttal Exhibit No. 1

For Community Utilities of Pennsylvania – Wastewater Division

- Direct Testimony, CUPA WW Statement No. 1 consisting of 24 pages of written testimony.

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021

J. Bryce Mendenhall
President
Community Utilities of Pennsylvania Inc.

CUPA W STATEMENT NO. 2
June 11, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

DIRECT TESTIMONY

OF

PERRY BROWN

REVENUES, EXPENSES, RATE BASE AND TEST YEAR(S) WATER

SPONSORING CUPA EXHIBIT NOS. PAB-1 AND PAB-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025206

Direct Testimony of Perry Brown

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME OCCUPATION AND BUSINESS ADDRESS.

A: My name is Perry Brown. I am a Financial Planning & Analysis Manager for Corix Regulated Utilities U.S., Inc. ("CRUUS") and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of CRUUS. My business address is 500 W, Monroe Ste 3600, Chicago, IL 60661

Q: PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

A: As the Financial Planning & Analysis Manager I am responsible for all aspects of the daily management of the business unit's accounting and finance operations, as well as reporting monthly and quarterly regional consolidated results. I develop and prepare CUPA's annual budget, monthly forecasts, and regulatory model along with all its sister companies in Maryland, New Jersey, and Virginia. My duties include the management of the regulatory accounting process, which involves directing, planning, managing and organizing regulatory filings for CUPA and its sister companies in the states listed previously.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A: I graduated from Northwood University in Midland, Michigan in 2013 with a Bachelor of Business Administration with a major concentration in Accounting and a minor

concentration in Finance. In 2020, I graduated with a Master of Business Administration with a Finance concentration. I joined CRRUS in January of 2014 as a Corporate Accountant and subsequently transitioned into a regulatory finance role in March of 2016.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?

A: Yes, I have. I submitted testimony in CUPA's previous rate cases at Docket Nos. R-2019-3008947 and R-2019-3008948.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: My testimony will provide an overview of the components listed below which are included in determining the $757,717 of additional revenues requested by CUPA in the rates specified in its tariff supplement increasing rates. I will provide insight as to how CUPA's forecasted test year income statement were developed for these components.

- Usage Decline/Normalization
- Miscellaneous Revenue
- Uncollectible Expense (Bad Debt)
- Salaries & Wages
- Pension & Other Employee Benefits
- Contractual Services - Other
- Weighted ERC Calculation
- Filing Corrections
- Tamiment Rate Base Determination

I will sponsor CUPAW Exhibit No. PAB-1 which contains all the workpapers referenced in my testimony. I will also sponsor CUPA WW Exhibit No. PAB-2 which contains support for the Tamiment rate base determination.

TEST YEAR

Q: WHAT TEST YEAR IS THE COMPANY PROPOSING?

A: CUPA has prepared all of the attachments and schedules using a fully projected future test year ("FPFTY") ended December 31, 2022. CUPA's schedules also include a "per books base period" for the fiscal year ("FTY") ended December 31, 2020 and a forecasted period for the FTY ended December 31, 2021.

Q: DOES CUPA HAVE ANY CORRECTIONS TO ITS ORIGINAL FILING?

A: Yes, as the Company has provided in response to interrogatories CUPA has discovered a handful of inadvertent errors that would have resulted in a material change in the Company's request for rate relief. The Company excluded the amortization of deferred costs related to COVID-19 in the FPFTY ending December 31, 2022. The inclusion of this amortization would have resulted in an increase of $6,270. The Company also adjusted the pro-forma revenues produced by the hydrant customers. CUPA incorrectly included a hydrant charge of $32.14 per hydrant for the calculation of the pro-forma in the original filing. The Company was authorized to collect $28.13 per hydrant however, the hydrant customers were billed at a rate of $33.42 per hydrant for the historical test year. These customers were subsequently refunded for this error. The impact of the hydrant billing error reduces the pro forma revenue by $3,902. CUPA discovered a calculation error with the billing determinants included on Section 2 Supporting Schedule No.1 Pages 2-3 and Section 2 Supporting Schedule 2-2. The Company miscalculated the pro forma billing units as the Company converted the quarterly billings to monthly. The correct billing units are reflected in response to interrogatories I&E-RS-4-D Part A and I&E-RS-5-D Parts B

& C which were provided to the parties on May 18, 2021 and found in WP-PB-06 (DR Responses to I&E-RS-4-D and I&E-RS-5-D - Water). Lastly, CUPA misallocated the salary expense for a regional finance employee using a Leadership allocation rate instead of the correct Regional allocation rate of 37.78% the impact of this misallocation would increase operating expenses $9,783 for the FTY and $10,004 for the FPFTY respectively. CUPA currently receives a regional allocation percentage of this employee's salary.

Q: IS THE COMPANY CHANGING ITS REVENUE INCREASE OF $757,717?

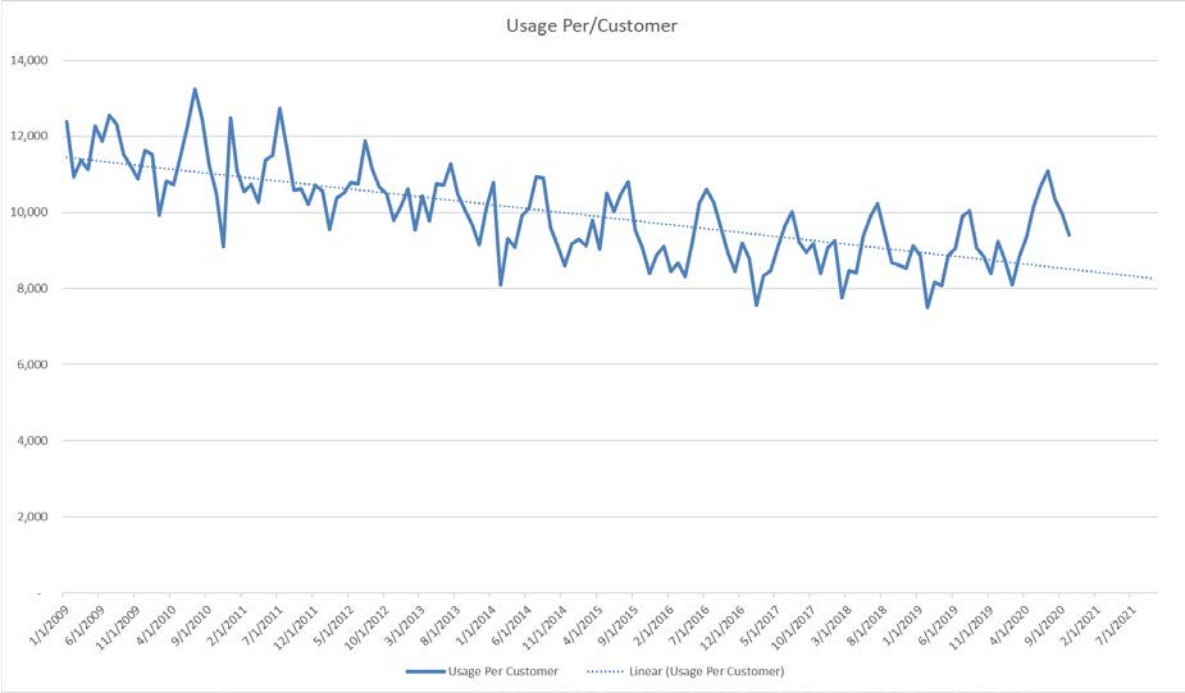
A: No.

NET INCOME CHANGES

IN ALL INSTANCES BELOW THE TERM "CHANGE" REPRESENTS THE DIFFERENCE BETWEEN TWO PERIODS BEING COMPARED.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO SERVICE REVENUES.

A: Forecasted levels of water revenues reflect test year-end customer counts and forecasted consumption levels which incorporate a usage normalization adjustment. The derivation of the forecasted/ FPFTY revenues is shown on Section 1 Page 9 of CUPAW Exhibit No. DC-1, and results in a state-wide increase of $757,717 to base year water revenues. The Company included a usage normalization adjustment to align projected consumption for the FPFTY with the long-range historical rate of declining usage.



Q: PLEASE DESCRIBE HOW THE USAGE NORMALIZATION ADJUSTMENT WAS CALCULATED.

A: Due to the ongoing decline in the rate of consumption, forecasted consumption includes a usage normalization adjustment. The usage normalization adjustment, which is summarized below (in annual terms), was developed by averaging the annual decline in consumption per customer from November 2009 through October 2020. The Company's forecasted annual consumption decline is -1.39%.

Community Utilities of Pennsylvania
Consumption Per Year

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
Total Annual Consumption Per Customer	135,030	133,870	127,222	122,616	116,628	115,254	110,746	106,893	107,776	97,011	114,646	117,063
Consumption Decline		-0.86%	-4.97%	-3.62%	-4.88%	-1.18%	-3.91%	-3.48%	0.83%	-9.99%	18.18%	-1.39%

Q: WHAT ANALYSIS DID THE COMPANY PERFORM TO IDENTIFY WHETHER THIS DECLINING USAGE WAS AFFECTED BY WEATHER?

A: The Company analyzed consumption patterns during winter months (December through February) over the same time period in order to assist in identifying if these trends shown above are weather-neutral. The below table illustrates a similar trend in consumption decline. The similar trend indicates that the declining consumption is not a result of weather impacts as weather has little, if any, impact on usage in the winter season. The company believed the isolation of winter months would provide valid feedback because usage outside would be lowest during the cold months because impact of rain and temperature would be mitigated.

Community Utilities of Pennsylvania
Consumption Per Year
Winter Months Dec-Feb

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
Total Annual Consumption Per Customer	32,282	32,383	30,493	30,590	28,211	28,196	26,217	24,695	25,490	24,517	25,666	28,067
Consumption Decline		0.31%	-5.84%	0.32%	-7.78%	-0.05%	-7.02%	-5.81%	3.22%	-3.82%	4.69%	-2.18%

Q: HAVE THE COMPANIES PERFORMED ANY OTHER ANALYSIS THAT WOULD FACTOR IN DIFFERENT VARIABLES THAT COULD CONTRIBUTE TO DECLINING USAGE?

A: Yes, at my direction the Company performed a regression analysis which is a valuable statistical tool that synthesizes raw data and expresses numerically the degree to which two or more variables are correlated or influence one another. The Company has analyzed a

multiple regression analysis to support the drivers behind the continued reduction in customer consumption as shown in the summary output table below. The analysis confirms that "Time" is the most prominent variable driving continuing usage decline. The multiple regression analysis illustrates the relationship between a dependent variable, in this instance usage per customer and multiple independent variables or explanatory variables.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.91
R Square	0.83
Adjusted R Square	0.81
Standard Error	522.12
Observations	142.00

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	15	170532679.5	11368845.3	41.70320189	1.63946E-41
Residual	126	34349269.19	272613.2475		
Total	141	204881948.7			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	11,146.97	523.36	21.30	0.00	10,111.26	12,182.68
Time	(25.89)	2.14	(12.08)	0.00	(30.13)	(21.65)
M2	(1,080.31)	218.07	(4.95)	0.00	(1,511.86)	(648.75)
M3	(198.79)	273.57	(0.73)	0.47	(740.17)	342.59
M4	(138.65)	396.47	(0.35)	0.73	(923.25)	645.94
M5	991.03	541.41	1.83	0.07	(80.41)	2,062.47
M6	1,401.49	635.37	2.21	0.03	144.12	2,658.86
M7	2,206.71	708.36	3.12	0.00	804.88	3,608.54
M8	1,704.37	674.70	2.53	0.01	369.15	3,039.59
M9	800.15	587.95	1.36	0.18	(363.39)	1,963.68
M10	287.80	434.79	0.66	0.51	(572.64)	1,148.25
M11	(593.20)	306.32	(1.94)	0.06	(1,199.39)	12.99
M12	188.72	242.28	0.78	0.44	(290.75)	668.19
Rainfall	(3.03)	11.68	(0.26)	0.80	(26.14)	20.08
Temperature	(18.71)	14.25	(1.31)	0.19	(46.92)	9.50
Rate Index	985.71	388.44	2.54	0.01	217.01	1,754.41

Q: PLEASE EXPLAIN THE INDEPENDENT VARIABLES INCLUDED BY THE COMPANY.

A: The Company has included fifteen (15) independent variables to explain the variation in usage per customer. They are explained below:

1. Time – Because this data is captured in a monthly time series, each subsequent month is recognized incrementally in the analysis. Time will help capture changes in customer behavior related to installation of low flow appliances and general conservation awareness. The period analyzed includes all months from January 2009 through October 2020.

2-12. M2-M12 – These variables identify in which month the usage per customer is occurring and are short for Month2 – Month12. M1, Month1 (January) is not identified as a variable, because January is effectively the starting point, or base point, within the year. Since water usage is seasonal and including the months will help capture weather implications because a variable such as rainfall will be more significant in the summer months when compared to the winter months.

13. Rainfall – This variable is measured as cumulative inches of precipitation within the respective month, per the National Oceanic and Atmospheric Administration ("NOAA"). The stations used for this data set was Allentown Lehigh Valley International Airport in Pennsylvania which is 6 miles from Bethlehem, PA. The Company also included rainfall data from Stroudsburg, PA, the city where Penn Estates system operates.

14. Temperature – This variable is measured as the average daily temperature within the respective month, per the NOAA. The daily temperature is determined by averaging the respective day's maximum and minimum temperature. The stations used for this data set was Allentown Lehigh Valley International Airport in Pennsylvania which is 6 miles from Bethlehem, PA. The Company also included data from the Stroudsburg, PA the city where Penn Estates system operates.

15. Rate Index – This variable is measured as the cumulative percentage change in total authorized revenue. The Rate Index begins at 1.00 in 2009, as this is the base period in

which all future increases are compared to. Both interim rates and final rates are considered for analysis purposes.

Q: PLEASE EXPLAIN WHETHER OR NOT IT CAN BE DETERMINED THAT TIME IS A VARIABLE INFLUENCING CUSTOMER CONSUMPTION.

A: Some of the key values contained in the output which confirm the validity of the analysis are: (1) R Square, (2) Significance F, and (3) Time.

(1) The R Square of .83 means 83% of the variation in usage per customer is explained by the independent variables included in the multiple regression analysis. The closer the R square is to 1, or 100%, the better the regression line fits the data.

(2) To determine if the results are relevant and statistically significant, the Significance F is reviewed. In this case, the Significance F shows a value of 0.00. Because the significance F is effectively zero, it is improbable (0%) that these independent variables do not explain the variation in usage per customer, and therefore the results are statistically significant.

(3) To determine if "Time" is a reliable and significant variable predicting usage per customer, both the P-value (calculated probability) and the 95% confidence intervals are reviewed. The P-value of 0.00, or 0%, suggests that it is improbable that "Time" is not significant in determining usage per customer. Stated another way, it suggests "Time" has a high probability of significance in predicting usage per customer. The lower 95% value of -30.13 and the upper 95% value of -21.65, suggest one can be 95% confident that the "Time" coefficient would fall between this range. Indeed, the "Time" coefficient of -25.89, does fall within this range, is

shown to have a negative relationship with usage, and is shown to have a high probability of significance in predicting Usage per customer.

Q: DID THE COMPANY INCLUDE TAMIMENT HISTORICAL DATA IN THE CONSUMPTION ANALYSIS.

A: No, the Company acquired the Tamiment service territory in 2019 and does not believe historical data from 2019-2020 for this territory will produce a proxy large enough for meaningful results.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO MISCELLANEOUS REVENUES.

A: Forecasted levels of miscellaneous revenues reflect a normalized level of revenue using a 3-year historical average from billing data from 2017 through 2019. In the historical test year ending December 31, 2020 the Company refund customer for the late payment charges that were assessed incorrectly due to an internal billing issue. Also, included in the test year were reclassification of miscellaneous revenue related to late payment charges. Pursuant to the Commission's COVID-19 related Termination Moratorium Orders at Docket No. M-2020-3019244 and the Secretarial Letter at Docket No. M-2020-3019775. CUPA deferred foregone late payment charges due to the economic impacts stemming from COVID-19. The level of miscellaneous revenue included for recovery reflects a normalized level that removes the additional charges due to the billing system errors and the reclassification of forgone late payment charges.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO UNCOLLECTIBLE ACCOUNTS.

A: Uncollectible accounts are recalculated based on a percentage of uncollectible amounts to service revenues for a three-year average from 2017-2019. The fiscal period 2020 was excluded from the development of the normalized percentage because CUPA experienced a higher level of uncollectible accounts largely attributed to the economic impacts of the global pandemic. This percentage calculated was applied to forecasted service revenues. The uncollectible rate for CUPA was .73%.

Q: PLEASE DETAIL THE FORECASTED WEIGHTED ERC CALCULATION FROM EACH OVERHEAD COST CENTER.

A: Forecasted costs are allocated based on updated December 31, 2020 ERC counts and are shown in WP-PB-01 (ERC Allocations).

Water Service Corp. ("WSC") - Costs which are allocated from WSC, also referred to as "Shared Services" costs, are allocated by multiplying forecasted Shared Services costs by the ERC ratio of the specific CUPA territory over the total of all companies who receive the same services from the Shared Service organization. Westgate is allocated at 0.33% of WSC's forecasted costs. Penn Estates is allocated at 1.17% of WSC's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 0.54% of WSC's forecasted costs. Tamiment is allocated at 0.37% of WSC's forecasted costs.

Leadership – Costs which are allocated from CUPA's Leadership/President cost center are allocated by multiplying the forecasted leadership cost center costs by the ERC ratio of the specific CUPA territory over the total of all of the leadership cost center's service territories. The other territories include operations in; IL, IN, KY, MD, NJ and VA.

Westgate is allocated at 1.92% of the Leadership's forecasted costs. Penn Estates is allocated at 6.73% of the Leadership's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 3.10% of Leadership's forecasted costs. Tamiment is allocated at 2.15% of Leadership's forecasted costs.

North Region SVP – Costs which are allocated from CUPA's Senior Vice President cost center are allocated by multiplying the forecasted SVP cost center costs by the ratio of the specific CUPA territory over the total of all of the SVP cost center's service territories. The other territories include operations in; IL, IN, KY, OH, MD, NJ and VA. Westgate is allocated at 1.36% of the SVP's forecasted costs. Penn Estates is allocated at 4.76% of the SVP's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 2.19% of SVP's forecasted costs. Tamiment is allocated at 1.52% of the SVP's forecasted costs. The ratio is developed by using CUPA's weighted proportion of plant in service, revenue, and headcount compared to the same components of all systems in the states listed above. Mid-Atlantic - Costs which are allocated from CUPA's Mid-Atlantic Regional cost center are allocated by multiplying the forecasted Mid-Atlantic regional cost center costs by the ERC ratio of the specific CUPA territory over the total of all of the Mid-Atlantic regional cost center's service territories. The other territories include operations in MD, NJ, and VA. Westgate is allocated at 5.23% of the Mid-Atlantic's forecasted costs. Penn Estates is allocated at 18.28% of the Mid-Atlantic's forecasted costs. Utilities Inc, of Pennsylvania is allocated at 8.41% of Mid-Atlantic's forecasted costs. Tamiment is allocated at 5.85% of Mid-Atlantic's forecasted costs.

State – Costs which are allocated from CUPA's State cost center are allocated by multiplying the forecasted state cost center costs by the ERC ratio of the specific CUPA

territory over the total of all of the CUPA's territories. Westgate is allocated at 13.84% of the State's forecasted costs. Penn Estates is allocated at 48.40% of the State's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 22.27% of State's forecasted costs. Tamiment is allocated 15.49% of the State's forecasted costs.

Q: PLEASE EXPLAIN HOW FORECASTED SALARIES AND WAGES WERE DETERMINED.

A: Salaries and wages are calculated by employee and are based upon current and anticipated levels of staffing. Salaries are calculated by averaging from a past period of the percentage of increase for labor. A 4% wage level increase is standard across all MidAtlantic operating companies in CRRUS. Deviations from the standard 4% pay increases are awarded based on merit, promotions, certifications, and manager discretion. This wage increase is standard across all operating companies at CRRUS because the Company believes that by granting an annual 4% increase to wage levels, the Company is able to retain key and highly trained personnel who are in demand by other water and sewer operations, both privately and municipally. Additional detail and underlying calculations are provided in WP-PB-02 (Salaries and Wages Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. PAB-1, total salaries and wages expense is forecasted to increase from $381,480 in the base period to $396,201 in the FPFTY.

Capitalized Time is forecasted based on anticipated capital investments from Operations. Additional detail and underlying calculations are provided in PB-02 (Salaries and Wages Expense). Capitalized time or cap time is calculated based on the following components:

Capital Project Cap Time - Operations has supplied a forecasted number of hours to be worked on each forecasted capital project. The unit of hours is multiplied against current PA operator cap time rates to determine capitalized time.

Capital Additions/Replacements Cap Time - FY 2022 forecast is based on a historical 8-year average (2013-2020) of capitalized time for generic plant additions/replacements.

Q: PLEASE EXPLAIN HOW PENSION AND OTHER BENEFITS COSTS WERE DETERMINED.

A: Pension and benefits costs are based on review and analysis of current and projected headcounts and corresponding benefits. Additional detail and underlying calculations are provided in WP-PB-03 (Pension and Benefit Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DC-1, pension and other benefits costs are forecasted to increase from $76,463 in the base period to $111,990 in the FPFTY. The increase in costs is driven by the level of health insurance claims. Health insurance costs are projected to increase 5%-8% annually.

Q: PLEASE EXPLAIN HOW FORECASTED CONTRACTUAL SERVICES-OTHER COSTS WERE DETERMINED.

A: Forecasts for Contractual Services – Other Costs are based on analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-10 (Contractual Services - Other) . As shown in Section 1, Page

12 of CUPA W Exhibit No. DC-1, contractual services – other costs are forecasted to decrease from $364,541 in the base period to $272,323 in the FPFTY.

Q: PLEASE DESCRIBE THE NATURE OF THE COSTS INCLUDED IN CONTRACTUAL SERVICES-OTHER.

A: The Company has included all costs allocated from CUPA's service company WSC along with additional costs for outside services not related to accounting or legal services. CUPA has always received costs allocation from WSC however these costs have historically been itemized based on NARUC accounting. Going forward all allocated overhead service costs from WSC will be presented as one. All costs allocated through Contractual Services-Others fall within the framework of CUPA's current affiliate interest agreements. These costs are allocated to CUPA from WSC using CUPA's ERC which is allowable under the terms of the approved agreement.

Q: PLEASE EXPLAIN THE DECREASE IN CONTRACTUAL SERVICE_OTHER FROM THE HTY TO THE FPFTY.

A: CUPA's parent company, Corix Infrastructures, had a previous structure that included two shared services groups one being WSC which provided services to only the United States subsidiaries under the Corix umbrella. The second shared services group provided services to Corix's Canadian subsidiaries. Corix has transitioned to merge the two groups into one shared services group that provides Accounting, Legal, Human Resources, ITC, and HSE services to all Corix Subsidiaries. This has resulted in previous costs incurred at WSC being spread across a larger base of subsidiaries. While shared service costs have increased, CUPA now receives less allocation of costs as its customer base represents a lower ratio than it has historically.

Q: IN YOUR OPINION DO THESE PROJECTIONS OR FORECASTS BEST REPRESENT CUPA'S EXPECTED FINANCIAL PERFORMANCE?

A: Yes, they do.

Q: IN YOUR OPINION ARE THESE PROJECTIONS REASONABLE AND RELIABLE?

A: Yes, they are. The projections are reasonable and are justifiable. Additionally, CUPA's work papers for planned projects and forecasts enable the other parties and the Commission to both test and recognize their appropriateness and reasonableness.

TAMIMENT RATE BASE

Q: PLEASE EXPLAIN THE RATE BASE VALUE FOR THE TAMIMENT WASTEWATER ASSETS.

A: Tamiment recorded a rate base value of $1,324,261 for its wastewater assets. Include in the rate base value was a plant balance of $2,212,733 and accumulated depreciation balance of $888,472 at the time of the acquisition. CUPA also prepared separate schedules to support the Tamiment Rate Base Determination. See CUPAW Exhibit No. PAB-2.

Q: PLEASE EXPLAIN HOW THE COMPANY DETERMINED THE RATE BASE VALUE.

A: CUPA included the book value of the assets and associated depreciation based on a fixed asset schedule provided by Pennsylvania Utility Company at the time the acquisition was recorded.

Q: PLEASE EXPLAIN WHY CUPA IS SEEKING TO ESTABLISH THE TAMIMENT RATE BASE VALUE IN THIS PROCEEDING.

A: Pursuant to the Commission's order at Docket Nos. A-2018-3005430, A-2018-3005431, A-2018-3005432 and A-2018-3005433, CUPA was ordered to file a base rate case to determine the final rate base value of the acquired assets of Pennsylvania Utility Company (Tamiment). The original Order required CUPA to file within 18 months of closing, or February 28, 2021. CUPA subsequently sought a 6-week extension of this deadline at P-2020-3023277 and P-2020-3023281 which was granted allowing it to file a base rate case on or before April 12, 2021 which would establish the final rate base value for these assets

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes, it does.

CUPA W Exhibit PAB-1

ERC Allocation Weights

Co	Territory	Water	Sewer	Total ERC Count	Water - Co	Sewer - Co	State	Mid-Atlantic	Leadership	WSC	SVP
315	Westgate	995	-	995			13.84%	5.23%	1.92%	0.33%	1.36%
316	UIP	-	1,601	1,601			22.27%	8.41%	3.10%	0.54%	2.19%
317	Penn Estates	1,740	1,739	3,479			48.40%	18.28%	6.73%	1.17%	4.76%
319	Tamiment	556	557	1,113			15.49%	5.85%	2.15%	0.37%	1.52%
CUPA	**State**	**3,291**	**3,897**	**7,188**	**45.79%**	**54.21%**	**100.00%**	**37.78%**	**13.90%**	**2.41%**	**9.83%**
	MD			4,627				24.32%	8.95%	1.55%	
	NJ			1,079				5.67%	2.09%	0.36%	
	VA			6,133				32.23%	11.86%	2.06%	
	Mid-Atlantic			**19,027**				**100.00%**	**36.81%**	**6.39%**	
	IL			16,394					31.71%	5.50%	
	IN			8,450					16.35%	2.84%	
	KY			7,824					15.14%	2.63%	
	Leadership			**51,694**					**100.00%**	**17.35%**	
	SC			31,268						10.50%	
	NV			24,704						8.29%	
	AZ			10,094						3.39%	
	FL			64,743						21.73%	
	LA			31,879						10.70%	
	GA			16,971						5.70%	
	TN			312						0.10%	
	NC			57,023						19.14%	
	al			2,264						0.76%	
	TX			6,966						2.34%	
	WSC			**297,918**						**100.00%**	

	(A)	(B)	(C)	(D)
	Source Tab - Salaries and Wages	Source Tab - Cap Time	Rounding	Water Total 12/31/2021
CUPA Forecast	**$ 416,403**	**$ (39,498)**	**$ -**	**$ 376,904**

Notes/Source:
(A) Payroll & Benefits - 2021 Tab
(B) Cap Time 2021 Tab
(C) Rounding
(D) = (A) + (B) + (C)

	(A)	(B)	(C)	(D)
	Source Tab - Pro Forma GL Cap Time Additions	Source Tab - Capital Projects PA	Rounding	Water Total 12/31/2021
CUPA Forecast	**$ 26,914**	**$ 12,585**	**$ -**	**$ 39,498**

Description of calculations:
Operating Expense charged to plant is forecasted based on historical cap time trends and projected project cap time needs
Tab, "Pro Forma GL Cap Time Additions" is cap time forecasted for generic asset replacement/additions
The forecasted amounts are based on a eight-year historical average, found in columns B-E
Tab, "Capital Projects PA" shows forecasted cap time by forecasted project, number of projected hours are multiplied by cap time rates for PA personnel

Notes/Source:
(A) Captime Tab
(B) Captime Tab
(C) Rounding
(D) = (A) + (B) + (C)

	(A)	(B)	(C)	(D)
	Source Tab - Salaries and Wages	Source Tab - Cap Time	Rounding	Water Total 12/31/2022
CUPA Forecast	**$ 435,488**	**$ (39,287)**	**$ -**	**$ 396,201**

Notes/Source:
(A) Payroll & Benefits - 2022 Tab
(B) Cap Time 2022 Tab
(C) Rounding
(D) = (A) + (B) + (C)

	(A)	(B)	(C)	(D)
	Source Tab - Pro Forma GL Cap Time Additions	Source Tab - Capital Projects PA	Rounding	Water Total 12/31/2022
CUPA Forecast	**$ 24,687**	**$ 14,601**	**$ -**	**$ 39,287**

Description of calculations:
Operating Expense charged to plant is forecasted based on historical cap time trends and projected project cap time needs
Tab, "Pro Forma GL Cap Time Additions" is cap time forecasted for generic asset replacement/additions
The forecasted amounts are based on a eight-year historical average, found in columns B-E
Tab, "Capital Projects PA" shows forecasted cap time by forecasted project, number of projected hours are multiplied by cap time rates for PA personnel

Notes/Source:
(A) Captime Tab
(B) Captime Tab
(C) Rounding
(D) = (A) + (B) + (C)

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2021	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**161,854**	**164,949**	**9.83%**	**68,177**	**37.78%**	**92,061**	**$ -**	**$ 228,930**	**45.79%**	**104,821**	**54.21%**	**124,110**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2021 Tab
(C) Payroll & Benefits - 2021 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2021 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2021 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2022	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**172,110**	**176,622**	**9.83%**	**72,110**	**37.78%**	**97,809**	**$ -**	**$ 244,588**	**45.79%**	**111,990**	**54.21%**	**132,598**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2022 Tab
(C) Payroll & Benefits - 2022 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2022 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2022 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

Community Utilities of Pennsylvania, Inc.
Payroll Tax Expense

WP-PB-04 (Payroll Tax)
Payroll Tax Expense Forecast

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2021	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**52,815**	**45,797**	**9.83%**	**25,864**	**37.78%**	**33,307**	**$ -**	**$ 68,265**	**45.79%**	**31,257**	**54.21%**	**37,008**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2021 Tab
(C) Payroll & Benefits - 2021 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2021 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2021 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

Community Utilities of Pennsylvania, Inc.
Payroll Tax Expense

WP-PB-04 (Payroll Tax)
Payroll Tax Expense Forecast

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2022	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**52,815**	**47,954**	**9.83%**	**26,233**	**37.78%**	**34,264**	**$ -**	**$ 70,819**	**45.79%**	**32,426**	**54.21%**	**38,393**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2022 Tab
(C) Payroll & Benefits - 2022 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2022 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2022 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

	(A) WSC ERC Allocation Weight	(B) Source Tab - Corp Cost 2021	(C) Source Tabs - 858, 315, 316, 317, & 319	(D) Rounding	(E) Total 12/31/2021	(F) Water ERC Allocation Weight	(G) Total Water	(H) Wastewater ERC Allocation Weight	(I) Total Wastewater
CUPA Forecast	2.41%	23,646,973	29,401	$ -	$ 599,911	45.79%	274,682	54.21%	325,229

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - WSC
(B) Corp Cost 2021 Tab
(C) Tabs 858, 315, 316, 317 & 319
(D) Rounding
(E) = (A) - (B) + (C) + (D)
(F) WP-PB-01 (ERC Allocations) - Water Co.
(G) = (E) * (F)
(H) WP-PB-01 (ERC Allocations) - Wastewater Co.
(I) = (E) * (H)

	(A) WSC ERC Allocation Weight	(B) Source Tab - Corp Cost 2022	(C) Source Tabs - 858, 315, 316, 317, & 319	(D) Rounding	(E) Total 12/31/2022	(F) Water ERC Allocation Weight	(G) Total Water	(H) Wastewater ERC Allocation Weight	(I) Total Wastewater
CUPA Forecast	**2.41%**	**24,529,145**	**2,965**	**$ -**	**$ 594,759**	**45.79%**	**272,323**	**54.21%**	**322,435**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - WSC
(B) Corp Cost 2022 Tab
(C) Tabs 858, 315, 316, 317 & 319
(D) Rounding
(E) = (A) - (B) + (C) + (D)
(F) WP-PB-01 (ERC Allocations) - Water Co.
(G) = (E) * (F)
(H) WP-PB-01 (ERC Allocations) - Wastewater Co.
(I) = (E) * (H)

CUPA W Exhibit PAB-2

Tamiment Acquisition

BU 319100

NARUC Account Number	Internal Account Number	UPIS or A/D	Category	Life (Years)	Description	Debit	Credit
354.00	1290	UPIS	Wastewater		STRUCTURES & IMPROVEMENTS	70,103.29	
354.30	1295	UPIS	Wastewater		SYSTEM PUMPING PLANT	179,856.92	
354.40	1300	UPIS	Wastewater		TREATMENT & DISPOSAL EQUIPMENT	1,310,234.14	
355.00	1325	UPIS	Wastewater		POWER GENERATION EQUIPMENT	120,285.09	
360.00	1345	UPIS	Wastewater		COLLECTION SEWERS - FORCE	29,918.85	
361.00	1350	UPIS	Wastewater		Collection Sewers - Gravity	525,628.09	
362.00	1355	UPIS	Wastewater		SPECIAL COLLECTING STRUCTURES	2,800.00	
363.00	1360	UPIS	Wastewater		SERVICES TO CUSTOMERS	243,899.58	
364.00	1365	UPIS	Wastewater		FLOW MEASURING DEVICES	14,514.05	
370.00	1375	UPIS	Wastewater		RECEIVING WELLS	170,054.20	
381.00	1410	UPIS	Wastewater		PLANT SEWERS	2,396.66	
382.00	1420	UPIS	Wastewater		OUTFALL SEWER LINES	117,058.33	
389.00	1425	UPIS	Wastewater		OTHER PLANT & MISC EQUIPMENT	27,819.24	
390.00	1460	UPIS	Wastewater		OFFICE FURNITURE & EQUIPMENT	5,089.87	
391.00	1560	UPIS	Wastewater		TRANSPORTATION EQUIPMENT	15,271.11	
393.00	1470	UPIS	Wastewater		TOOLS SHOP & GARAGE EQUIPMENT	14,151.72	
394.00	1475	UPIS	Wastewater		LABORATORY EQUIPMENT	1,707.09	
395.00	1480	UPIS	Wastewater		Power Operated Equipment	8,970.00	
398.00	1500	UPIS	Wastewater		OTHER TANGIBLE PLANT	1,258.31	
304.20	1050	UPIS	Water		SOURCE OF SUPPLY & PLUMBING STRUCTURES	90,295.06	
304.30	1055	UPIS	Water		STRUCTURES & IMPROVEMENTS	1,507.39	
307.00	1080	UPIS	Water		WELLS & SPRINGS	90,894.52	
309.20	1090	UPIS	Water		Supply mains	6,581.60	
310.30	1095	UPIS	Water		POWER GENERATION EQUIPMENT	139.56	
311.00	1105	UPIS	Water		PUMPING EQUIPMENT	53,061.35	
320.00	1115	UPIS	Water		WATER TREATMENT EQUIPMENT	22,152.20	
330.00	1120	UPIS	Water		DISTRIBUTION RESERVES & STANDPIPES	652,875.54	
331.00	1125	UPIS	Water		TRANSMISSION AND DISTRIBUTION MAINS	817,046.98	
333.00	1130	UPIS	Water		SERVICES	206,103.61	
334.00	1135	UPIS	Water		METERS & METER INSTALLATIONS	162,970.30	
335.00	1145	UPIS	Water		HYDRANTS	69,284.69	
336.00	1150	UPIS	Water		BACKFLOW PREVENTION DEVICES	231.51	
339.00	1165	UPIS	Water		OTHER PLANT & MISCELLANEOUS EQUIPMENT	1,260.08	
340.00	1180	UPIS	Water		OFFICE FURNITURE & EQUIPMENT	10,329.00	
341.00	1555	UPIS	Water		TRANSPORTATION EQUIPMENT	5,162.04	
343.00	1190	UPIS	Water		TOOLS, SHOP & GARAGE EQUIPMENT	22,262.69	
345.00	1200	UPIS	Water		POWER OPERATING EQUIPMENT	128.97	
346.50	1205	UPIS	Water		COMMUNICATION EQUIPMENT	446.40	
354.00	2050	Accumulated Depreciation	Wastewater		STRUCTURES & IMPROVEMENTS		12,308.03
354.30	2055	Accumulated Depreciation	Wastewater		SYSTEM PUMPING PLANT		157,350.43
354.40	2060	Accumulated Depreciation	Wastewater		TREATMENT & DISPOSAL EQUIPMENT		800,024.68
355.00	2080	Accumulated Depreciation	Wastewater		POWER GENERATION EQUIPMENT		81,154.88
360.00	2105	Accumulated Depreciation	Wastewater		COLLECTION SEWERS - FORCE		1,559.91
361.00	2110	Accumulated Depreciation	Wastewater		Collection Sewers - Gravity		288,111.33
362.00	2115	Accumulated Depreciation	Wastewater		SPECIAL COLLECTING STRUCTURES		875.00
363.00	2120	Accumulated Depreciation	Wastewater		SERVICES TO CUSTOMERS		149,325.86
364.00	2125	Accumulated Depreciation	Wastewater		FLOW MEASURING DEVICES		13,669.69
370.00	2135	Accumulated Depreciation	Wastewater		RECEIVING WELLS		30,482.62
381.00	2170	Accumulated Depreciation	Wastewater		PLANT SEWERS		516.78
382.00	2180	Accumulated Depreciation	Wastewater		OUTFALL SEWER LINES		48,420.95
389.00	2185	Accumulated Depreciation	Wastewater		OTHER PLANT & MISC EQUIPMENT		4,014.60
390.00	2220	Accumulated Depreciation	Wastewater		OFFICE FURNITURE & EQUIPMENT		5,709.72
391.00	2300	Accumulated Depreciation	Wastewater		TRANSPORTATION EQUIPMENT		9,430.21
393.00	2230	Accumulated Depreciation	Wastewater		TOOLS SHOP & GARAGE EQUIPMENT		6,869.05
394.00	2235	Accumulated Depreciation	Wastewater		LABORATORY EQUIPMENT		1,778.22
395.00	2240	Accumulated Depreciation	Wastewater		Power Operated Equipment		5,819.08
398.00	2255	Accumulated Depreciation	Wastewater		OTHER TANGIBLE PLANT		460.09
304.20	1845	Accumulated Depreciation	Water		SOURCE OF SUPPLY & PLUMBING STRUCTURES		56,231.64
304.30	1850	Accumulated Depreciation	Water		STRUCTURES & IMPROVEMENTS		435.69
307.00	1875	Accumulated Depreciation	Water		WELLS & SPRINGS		30,828.40
309.20	1885	Accumulated Depreciation	Water		Supply mains		451.28
310.30	1890	Accumulated Depreciation	Water		POWER GENERATION EQUIPMENT		36.98
311.00	1895	Accumulated Depreciation	Water		PUMPING EQUIPMENT		17,777.26
320.00	1910	Accumulated Depreciation	Water		WATER TREATMENT EQUIPMENT		19,916.30
330.00	1915	Accumulated Depreciation	Water		DISTRIBUTION RESERVES & STANDPIPES		192,571.05
331.00	1920	Accumulated Depreciation	Water		TRANSMISSION AND DISTRIBUTION MAINS		320,215.26
333.00	1925	Accumulated Depreciation	Water		SERVICES		123,691.31
334.00	1930	Accumulated Depreciation	Water		METERS & METER INSTALLATIONS		60,549.04
335.00	1940	Accumulated Depreciation	Water		HYDRANTS		27,518.07
336.00	1945	Accumulated Depreciation	Water		BACKFLOW PREVENTION DEVICES		115.11
339.00	1950	Accumulated Depreciation	Water		OTHER PLANT & MISCELLANEOUS EQUIPMENT		1,029.41
340.00	1975	Accumulated Depreciation	Water		OFFICE FURNITURE & EQUIPMENT		15,534.38
341.00	2305	Accumulated Depreciation	Water		TRANSPORTATION EQUIPMENT		3,129.20
343.00	1985	Accumulated Depreciation	Water		TOOLS, SHOP & GARAGE EQUIPMENT		17,871.20
345.00	1995	Accumulated Depreciation	Water		POWER OPERATING EQUIPMENT		74.16
346.50	2000	Accumulated Depreciation	Water		COMMUNICATION EQUIPMENT		496.62
	1700	CWIP	Wastewater		CURRENT WORK IN PROGRESS	439,920.48	

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025206
	:	
Community Utilities of Pennsylvania Inc. – Water Division	:	
	:	
Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025207
	:	
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
PERRY BROWN
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, Perry Brown, hereby certify that I am the Financial Planning & Analysis Manager of the Corix Regulated Utilities U.S., Inc. and its subsidiaries, and that I have provided testimony behalf of the Community Utilities of Pennsylvania Inc. ("CUPA").

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

<u>For Community Utilities of Pennsylvania – Water Division</u>

- Direct Testimony, CUPA W Statement No. 2 consisting of 17 pages of written testimony with accompanying exhibits including:
    - CUPA W Exhibit No. PAB-1 and PAB-2
- Rebuttal Testimony, CUPA W Statement No. 2-R consisting of 9 pages of written testimony with accompanying exhibits:
    - CUPA W Exhibit No. PB-1R and

- CONFIDENTIAL CUPA W Exhibit PB-2R and PB-3R

- Rejoinder Testimony, CUPA W Statement No. 2-RJ consisting of 7 pages of written testimony with accompanying exhibits:
  - CUPA Exhibit No. PB-1RJ

<u>For Community Utilities of Pennsylvania – Wastewater Division</u>

- Direct Testimony, CUPA WW Statement No. 2-R consisting of 11 pages of written testimony with accompanying exhibits including:
  - CUPA WW Exhibit No. PAB-1 and PAB-2

- Your Rebuttal Testimony, CUPA WW Statement No. 2-R consisting of 9 pages of written testimony with accompanying exhibits:
  - CUPA WW Exhibit No. PB-1R and
  - CONFIDENTIAL CUPA WW Exhibit PB-2R and PB-3R

- Rejoinder Testimony, CUPA WW Statement No. 2-RJ consisting of 7 pages of written testimony with accompanying exhibits:
  - CUPA Exhibit No. PB-1RJ

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: <u>September 7, 2021</u>

Perry Brown
Financial Planning & Analysis Manager
Corix Regulated Utilities U.S., Inc.

CUPA W STATEMENT NO. 3
June 11, 2021

August 31, 2020 Errata

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

DIRECT TESTIMONY

OF

DAVID CLARK

REVENUES, EXPENSES, RATE BASE AND TEST YEAR(S) WATER

SPONSORING CUPAEXHIBIT NOS. DMC-1 AND DMC-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025206

Direct Testimony of David Clark

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME OCCUPATION AND BUSINESS ADDRESS.

- A: My name is David Clark. I am a Financial Analyst II for Corix Regulated Utilities U.S., ("CRU-US") and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of Corix Regulated Utilities U.S. My business address is 500 W, Monroe Ste 3600, Chicago, IL 60661.

Q: PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

- A: My responsibilities include: financial analysis of individual subsidiaries of CRU-US, preparation and submission of rate applications, facilitation of regulatory audits and the submission of testimony and exhibits to support rate applications. I am responsible for ratemaking activities for individual companies, including CUPA.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

- A: I graduated from East Texas Baptist University in Marshall, Texas in 2007 with a Bachelor of Business Administration in Accounting. I worked from 2007 to 2012 in the accounting/finance group for a telecommunications company before joining Corix in December of 2012 as a Senior Accountant.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?

- A: No.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

- A: My testimony will provide an overview of the components included in determining the appropriate level of recovery requested by CUPA. I will provide insight as to how CUPA's forecasted test year income statement and rate base were developed. I will sponsor CUPAW Exhibit No. DMC-1 which is supporting data as to the rate base, revenue and expense claims of CUPA. This supporting data was supplied as part of CUPA's initial filing. I am also sponsoring CUPAW Exhibit No. DMC-2 which contains all the workpapers referenced in my testimony.

Q: Please describe the contents of CUPAW Exhibit No. DMC-1.

A: CUPAW Exhibit No. DMC-1 is divided into two sections. Section 1 contains general information as to the tariff supplement, rate base, revenues and expenses in response to the Commission's regulations at 52 Pa. Code §53.52. Section 2 contains Supporting Schedule Nos. 1 through 12, which provide further, detailed information from which the Company's various claims, shown in Section 1, were derived.

Q: WHAT ARE THE NAMES OF THE SERVICE TERRITORIES SERVED BY CUPA?

- A: The service territories include:
  - Penn Estates Utilities, Inc. ("PEUI") which has both water and sewer operations.
  - Utilities Inc. of Westgate ("UIW") which has only water operations.

- Utilities Inc. of Pennsylvania ("UIP") which has only sewer operations.
- Tamiment (formerly known as Pennsylvania Utility Co.) which has both water and sewer operations.

TEST YEAR

Q: WHAT TEST YEAR IS THE COMPANY PROPOSING?

- A: CUPA has prepared all of the attachments and schedules using a fully projected future test year ("FPFTY") ended December 31, 2022. CUPA's schedules also include a "per books base period" for the fiscal year ("FY") ended December 31, 2020 and a forecasted period for the FY ended December 31, 2021.

Q: WHY IS THE COMPANY PROPOSING THE USE OF A FPFTY?

- A: The Company is proposing the use of a future test year which will enable it to recover costs for large, forecasted projects and increasing operating expenses without seeking recovery through multiple rate proceedings, thereby reducing rate case expense for ratepayers and increasing rate affordability. The use of a forecasted test year will enable the Company to reduce regulatory lag and provide the Company with a reasonable opportunity to actually earn the return the PUC allows because historic test years do not consider changes that occur during the rate case or thereafter.

FORECASTING METHODOLOGY

Q: HOW WERE THE COMPANY'S FORECASTS DEVELOPED?

- A: In general, CUPA uses a driver-based budgeting approach which attempts to determine cost drivers for every item, where practical. The Company's forecasts were developed with input from management, operations teams and personnel from CRU-US's shared services business unit. The projections were finalized in January of 2021 and were approved by CUPA's Management Committee or Board in January of 2021. Forecast guidelines are discussed in the below sections; "Net Income Changes" and "Rate Base Changes".

Q: HOW WAS THE COMPANY'S FORECASTED REVENUE REQUIREMENT DEVELOPED?

- A: The Company's revenue requirement was developed by matching the revenues for the year the rate increase is authorized with the forecasted operating expenses and forecasted rate base for such year. This will help provide the Company a reasonable opportunity to earn its authorized return.

Q: DO YOU ANTICIPATE ANY MATERIAL CHANGES TO THE PROJECTIONS?

- A: No, I do not.

Q: IN YOUR OPINION DO THESE PROJECTIONS OR FORECASTS BEST REPRESENT CUPA'S EXPECTED FINANCIAL PERFORMANCE?

- A: Yes, they do.

Q: IN YOUR OPINION ARE THESE PROJECTIONS REASONABLE AND RELIABLE?

- A: Yes, they are. The projections are reasonable and are justifiable. Additionally, CUPA's work papers for planned projects and forecasts enable the other parties and the Commission to both test and recognize that they are appropriate and reasonable.

RELIEF REQUESTED

Q: PLEASE SUMMARIZE THE RELIEF SOUGHT BY CUPA.

- A: As discussed in greater detail below, CUPA is requesting an incremental rate increase to produce additional water revenues of $757,517 per year.

Q: PLEASE SUMMARIZE THE PROPOSAL FOR CUPA'S REQUESTED RATE INCREASE.

- A: On a state-wide rate level, assuming residential customer usage in the consolidated service territories of 4,089 gallons per month, an average 5/8" residential customer will pay $72.26 a month. For the Tamiment (formerly known as Pennsylvania Utility Co.) service territory, assuming residential customer usage of 2,738 gallons per month, an average 5/8" residential customer will pay $57.49.

Q: WHY IS CUPA REQUESTING RATE RELIEF?

- A: Under present rates, neither CUPA nor any of its water service territories are able to cover their operating expenses, costs of capital, and earn a reasonable return on their system investments. The utility's current operating income statement for twelve months ended December 31, 2020, ("Per Books") is shown in Section 1, Page 11 of CUPAW Exhibit No. DMC-1. The current rates for CUPA's territories do not reflect anticipated

rising operational costs and capital investments in infrastructure which have been realized since CUPA's water rates were last established. CUPA is requesting rate relief using a FPFTY for the twelve months ended December 31, 2022, so that it can continue to provide safe, reliable and efficient services to its customers while earning a reasonable return for its investors.

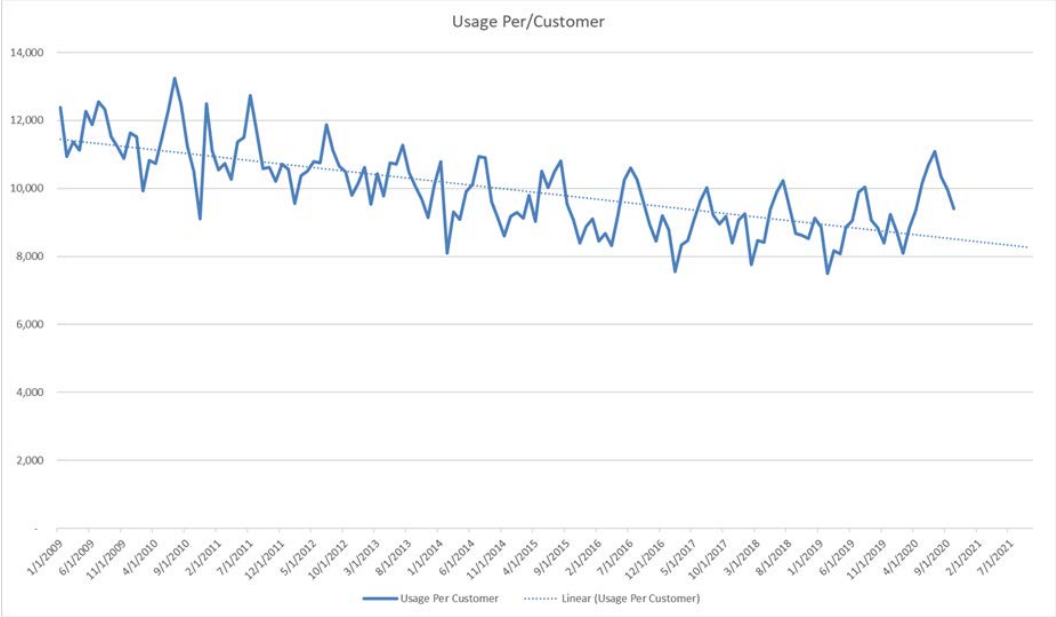
NET INCOME CHANGES

IN ALL INSTANCES BELOW THE TERM "CHANGE" REPRESENTS THE DIFFERENCE BETWEEN TWO PERIODS BEING COMPARED.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO SERVICE REVENUES.

- A: Forecasted levels of water revenues reflect test year-end customer counts and forecasted consumption levels which incorporate a usage normalization adjustment. The derivation of the forecasted/ FPFTY revenues is shown on Section 1 Page 9 of CUPAW Exhibit No. DMC-1, and results in a state-wide increase of $757,517 to base year water revenues. The Company included a usage normalization adjustment to align projected

consumption for the FPFTY with the long-range historical rate of declining usage.



Q: PLEASE EXPLAIN GENERALLY HOW THE FORECASTED CHANGES TO O&M (MAINTENANCE AND GENERAL EXPENSES) WERE DETERMINED.

- A: Forecasted O&M expenses for periods December 31, 2021 and 2022 were developed using the guidelines discussed below. O&M expenses can be direct-billed to CUPA, allocated to CUPA by the Shared Service Company, President, Regional, and State Cost Centers, or costs can be a combination of direct and allocated expenses. Allocations are based on December 31, 2020 weighted ERC counts for each cost type. Please refer to CUPAW Exhibit No. DMC-2 WP-DC-01 (ERC Allocations).

Q: PLEASE EXPLAIN HOW FORECASTED PURCHASED POWER COSTS WERE DETERMINED.

- A: Electric power costs are forecasted by month based on the historical levels of electric power costs. FY 2021 and FY 2022 forecasts are based on the latest seven years of vendor invoicing for the service periods 06/01/2013-05/30/2020. The latest twelve months (06/01/2019-05/30/2020) of service costs were used as a base and an average annual growth rate from the historical periods was applied to all forecast periods. It was assumed that any seasonality from the seven years analyzed will continue. Details of these calculations are provided in WP-DC-03 (Purchased Power Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, purchased power costs are forecasted to decrease from $120,160 in the base period to $106,110 in the FPFTY. The Company engaged with a new power supplier, Integrity Energy, which resulted in a decreased forecasted purchased power expense for the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED PURCHASED WATER COSTS WERE DETERMINED.

- A: Purchased water costs are forecasted by month based on respective levels of forecasted purchased water and forecasted purchased water rates. Forecasted purchased water rates of $3.97 per thousand gallons along with a monthly base charge of $1,457 are based on current charges by CUPA's supplier, City of Bethlehem. The company is anticipating a future increase from the City of Bethlehem as was approved by the PUC in April and will make necessary adjustments once it becomes effective. Forecasted purchased water volumes are calculated based on an average of historical volumes of purchased water, discounted by 2% annually. The 2% discount assumes both declining

customer usage and changes in water losses, as the volume used to calculate purchased water expense is based on pumped water and not sold water. Details of these calculations are provided in WP-DC-04 (Purchased Water Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, purchased water costs are forecasted to decrease from $263,128 in the base period to $217,663 in the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSES WERE DETERMINED.

- A: Forecasts for materials, supplies, and other maintenance expense costs expenses are based on a 3-year historical average expense analysis. Additional detail and underlying calculations are provided in WP-DC-04 (Materials, Supplies, and Other Maintenance Expense). As shown in Section 1, Page 12 of the CUPAW Exhibit No. DMC-1, materials, supplies, and other maintenance expenses are forecasted to decrease from $265,020 in the base period to $116,943 in the FPFTY. Maintenance and repair expenses are broken down into the following categories:
- Deferred Maintenance – Amortization of deferred maintenance is forecasted to increase from $15,648 in the base period to $18,192 in the FPFTY. Deferred maintenance expense is forecasted based on current and planned deferred asset costs. These costs are amortized each month over their useful lives until no value remains. The Company has included an expense adjustment/reduction of $6,270 to address an issue that was identified post-filing.
- Uniforms – Uniforms are forecasted based on a 3-year historical average expense analysis. Uniform costs are forecasted to increase from $1,466 in the base period to $2,743 in the FPFTY.

- Weather/Hurricane/Fuel Expense – Weather/Hurricane/Fuel Expense is forecasted based on the 3-year historical average in the territories and state cost center. Weather/Hurricane/Fuel Expense costs are forecasted to increase from $1,025 in the base period to $1,967 in the FPFTY.
- Other – Other maintenance and repairs expenses have been forecasted for calendar year 2022 using the 3-year historical average expense. Other maintenance and repair expenses are forecasted to decrease from $246,881 in the base period to $94,042 in the FPFTY. The forecasted decrease is the result of using the 3-year historical average expense.

Q: PLEASE EXPLAIN HOW FORECASTED TESTING, METER READING, AND MISCELLANEOUS EXPENSES WERE DETERMINED.

- A: Additional detail and underlying calculations are provided in WP-DC-11 (Testing, Meter Reading, and Misc. Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, operating expenses charged to plant are forecasted to decrease from $54,151 in the base period to $43,343 in the FPFTY. Testing, Meter Reading, Travel, and Miscellaneous Expense is broken down into the following categories:
- Meter Reading – Meter Reading is forecasted based on an analysis of number of non-AMR meters multiplied by the historical cost to read each meter. The Company included an annual level of expense for meter reading software. Meter reading costs are forecasted to increase from $7,356 in the base period to $12,104 in the FPFTY due to the addition of Sensus meter reading software maintenance.
- Miscellaneous Expense – Miscellaneous costs are forecasted based on an analysis of recurring costs such as membership dues and bank service charges. Other miscellaneous

costs such as training expense, are based on the needs of each department. Miscellaneous Expense is forecasted to increase from $5,842 in the base period to $7,997 in the FPFTY.

- Travel Expense – Travel Expense is forecasted based on an analysis of historical costs for travel related expenses in Pennsylvania, as well as the other cost centers that are allocated to Pennsylvania operations. The increase in costs is driven by fewer travel expenses being incurred during the test year due to the pandemic. Travel expense is forecasted to increase from $3,074 in the base period to $4,520 in the FPFTY.
- Maintenance Testing - Maintenance testing costs are forecasted based on the anticipated testing requirements for CUPA operations. Testing expense is forecasted using the monthly historical average costs. Maintenance testing costs are forecasted to decrease from $37,880 in the base period to $18,721 in the FPFTY. This decrease is primarily due to base period water vs. wastewater allocation differences due to a change in accounting software.

Q: PLEASE EXPLAIN HOW FORECASTED CHEMICAL COSTS WERE DETERMINED.

- A: The monthly forecasts for Chemicals are based on anticipated demand of each chemical. The forecast is based on analysis completed by operations, which includes estimated chemical costs per unit, by chemical type. The estimated chemical costs are determined by review of current costs. An estimated number of units, which is based on historical seasonal needs, of each chemical type is then used as a multiplier to determine forecasted chemical expense for each system. Additional detail and underlying calculations are provided in WP-DC-06 (Chemical Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, chemical expense is forecasted to increase from $85,106 in the base period to $113,899 in the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED TRANSPORTATION COSTS WERE DETERMINED.

- A: Forecasts for Transportation Expense are based on analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-07 (Transportation Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, transportation costs are forecasted to decrease from $24,408 in the base period to $22,580 in the FPFTY. Transportation expenses are broken down into the following categories:
- Fuel – Fuel expense is forecasted to increase from $9,922 in the base period to $11,114 in the FPFTY. Fuel cost for FY 2022 were forecasted by using projected national fuel prices (cost per gallon) from the US Energy Information Administration's outlook as a base and adjusting by the average fuel price change over the prior six years, and then normalizing for Pennsylvania. A two-year average of gallons used (August 2019-July 2020) for the Company's vehicles was used as a base for forecasted gallons to be purchased for the FPFTY 2022. The increase to expense is primarily driven by a forecasted increase in fuel costs.
- Auto Repairs – Monthly historical average costs drive the auto repair forecast for the Pennsylvania State cost center. Auto Repair expense is forecasted to decrease from $10,972 in the base period to $10,104 in the FPFTY.
- Other – Other transportation expenses are forecasted to decrease from $3,513 in the base period to $1,363 in the FPFTY. Other transportation expense includes license renewals and miscellaneous transportation costs.

Q: PLEASE EXPLAIN HOW FORECASTED ENGINEERING FEES WERE DETERMINED.

- A: Engineering Fees are forecasted based on analysis of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-08 (Engineering Fees). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, Engineering Fees are forecasted to decrease from $20,317 in the base period to $9,953 in the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED CONTRACTUAL SERVICES-LEGAL COSTS WERE DETERMINED.

- A: Contractual Services – Legal Costs forecasts are driven by analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-08 (Contractual Services - Legal). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, contractual services – legal costs are forecasted to decrease from $5,786 in the base period to $3,815 in the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED OFFICE UTILITIES, SUPPLIES, & OTHER OFFICE EXPENSES WERE DETERMINED.

- A: Forecasts for Office Utilities, Supplies and Other Office Expense are based on analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-09 (Office Utilities, Supplies and Other Office Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, Office Utilities, Supplies and Other Office Expense is forecasted to decrease from $49,298 in the base period to $45,196 in the FPFTY. Office Utilities Supplies and Other Office Expense is broken down into the following categories:

- Office Expense – The forecast for office expenses is based on estimated needs and the assumption historical costs will increase by a growth rate of 2%. Office costs are forecasted to increase from $6,313 in the base period to $8,114 in the FPFTY.
- Office Utility – Forecasts for office utilities are based on estimated needs and historical spend. Office costs are forecasted to decrease from $27,604 in the base period to $24,198 in the FPFTY.
- Billing and Customer Service – Billing and customer service costs are forecasted to decrease from $12,117 in the base period to $10,007 in the FPFTY. The decrease in costs is related to a decrease in customer mailings anticipated during the FPFTY.
- Information Technology –Information Technology costs are forecasted to decrease from $3,264 in the base period to $2,877 in the FPFTY.

Q: PLEASE EXPLAIN HOW REGULATORY COMMISSION EXPENSES WERE DETERMINED.

- A: The forecast for regulatory expense is based on current and planned rate case costs. These costs are amortized each month over their useful lives until no value remains. As shown in Section 2, Page 8 of CUPAW Exhibit No. DMC-1, regulatory commission expense is forecasted to increase from $26,331 in the base period to $36,709 in the FPFTY. The projected increase in regulatory commission expense is driven by the projected expense to be incurred for the current case. If necessary, this expense will be updated at the time rebuttal testimony is filed to reflect a more accurate forecast amount.

Q: PLEASE EXPLAIN HOW INSURANCE COSTS WERE DETERMINED.

- A: Insurance costs are forecasted at CRU-US and are based on review and analyses of current and projected insurance policies. Additional detail and underlying calculations are provided in WP-DC-10 (Insurance Expense). As shown in Section 1, Page 12 of CUPAW Exhibit No. DMC-1, insurance expense is forecasted to increase from $33,028 in the base period to $50,734 in the FPFTY. The increase in costs is driven by an increase in insurance premiums from Marsh and Alliant, CRU-US's primary insurance providers. 2021/2022 forecasted costs are calculated by assuming historical premium increase percentages.

Q: PLEASE EXPLAIN HOW TAXES OTHER THAN INCOME TAXES WERE DETERMINED.

- A: Taxes Other than Income Taxes ("TOTI") are forecasted based on forecasted levels of salaries, revenues, and plant in service. Additional detail and underlying calculations are provided in supporting work papers (referenced below). As shown on Section 2, Page 5 of CUPAW Exhibit No. DMC-1, TOTI is forecasted to increase from $57,416 in the base period to $79,294 in the FPFTY. TOTI is broken down into the following categories:
- Payroll Taxes – Payroll taxes are forecasted to increase from $28,597 in the base period to $32,487 in the FPFTY. Payroll taxes are calculated based on forecasted salaries. Additional detail and underlying calculations are provided in WP-PB-04 (Payroll Tax Expense - CONFIDENTIAL).
- Utility Commission Assessment – Utility Commission assessments are forecasted to increase from $9,350 in the base period to $18,624 in the FPFTY. Utility Commission tax assessment is calculated as 0.66% of revenue. The increase in utility assessments is based

on an increase in recognized revenue. Additional detail and underlying calculations are provided in WP-DC-12 (Utility Commission Tax Expense).

- Property Taxes – Property taxes are forecasted to increase from $19,468 in the base period to $23,167 in the FPFTY. The PA property tax rate is calculated using an average historical property tax rate, which is an average of historical property tax expense as a percentage of net plant in service. The increase in property taxes is based on an increase in forecasted net plant in service. Additional detail and underlying calculations are provided in WP-DC-13 (Property Tax Expense).

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO DEPRECIATION.

- A: The Company is not proposing any change to current depreciation rates for each water service territory. The Company included an annualized level of depreciation based on the projected FPFTY plant balance.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO AMORTIZATION.

- A: The Company is not proposing any change to current amortization rates for each water territory.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO INCOME TAXES.

- A: Forecasted Income Taxes are computed on taxable income at the following rates (21% Federal and 9.99% State).

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO INTEREST DURING CONSTRUCTION.

- A: Interest During Construction ("IDC") on the P&L is eliminated for rate-making purposes.

RATE BASE CHANGES

IN ALL INSTANCES BELOW THE TERM "CHANGE" REPRESENTS THE DIFFERENCE BETWEEN TWO PERIODS BEING COMPARED.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO UTILITY PLANT IN SERVICE.

- A: Forecasted Utility Plant in Service is based on the per books amounts and adjusted for the proper reallocation of vehicles and computers. Forecasted changes also include forecasted vehicle additions and computer additions, as shown on Supporting Schedule No. 9(a-b), Section 2 of CUPAW Exhibit No. DMC-1. Forecasted investments for water infrastructure are described below and included in "Net Pro Forma Plant".

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO ACCUMULATED DEPRECIATION.

- A: Forecasted Accumulated Depreciation is based on the per books amounts and adjusted for the proper reallocation of vehicles and computers and forecasted retirements of vehicles and computers. Forecasted changes also include the incremental depreciation related to the base year gross plant in service and forecasted plant additions net of all retirements.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO CASH WORKING CAPITAL.

- A: Forecasted Working Capital is calculated based on forecasted O&M expense as well as forecasted Taxes Other Than Income expense.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO NET CONTRIBUTIONS IN AID OF CONSTRUCTION.

- A: Forecasted Net Contributions in Aid of Construction were adjusted by the incremental amortization of the base year gross balances.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO ACCUMULATED DEFERRED INCOME TAXES.

- A: Forecasted Accumulated Deferred Income Taxes was adjusted to reflect projected differences between book depreciation and tax depreciation.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO NET PLANT ACQUISITION ADJUSTMENT.

- A: Forecasted Net Plant Acquisition Adjustment ("PAA") for CUPA's Penn Estates service territory was adjusted by the incremental amortization of the base year gross balances. Forecasted Net positive PAA for CUPA's Westgate service territory was removed as it had been in all previous Westgate rate proceedings.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO NET PRO FORMA PLANT.

- A: Net Pro Forma Plant includes the forecasted additions of capital projects, capital additions/replacements, and capitalized time. Forecasted methods are detailed below.

Q: PLEASE EXPLAIN HOW FORECASTED CAPITAL INVESTMENTS WERE DETERMINED.

- A: An analysis of the Company's utility plant in service was made by the Company's operations and capital projects teams in order to determine the necessary capital projects

and improvements through the end of the FPFTY (please refer to the testimony of Company witness Bryce Mendenhall for further details on capital investments). Forecasted general ledger plant additions are $1,360,180 for FY 2021 and $1,370,812 for FY 2022. Additional detail and underlying calculations are provided in WP-DC-14 (Net Capital Investments).

- Capital Projects/Retirements - Capital Project costs are calculated based on cost estimates sourced from the Company's operations and capital projects team and, where applicable, projections may be sourced from engineering firms or other qualified external vendors.
- Capital Additions/Replacements: FY December 31, 2021 and 2022 forecasts are estimated based on a historical spending average from years 2013-2020.
- Capitalized Time: FY December 31, 2021 and 2022 forecasts are estimated based on a historical spending average from years 2013-2020.
- Transportation: After a comprehensive review of each vehicle's mile, condition, and age, vehicle replacement costs are provided by operations & finance. Associated retirements are based on book costs of the replaced vehicles at the projected time of replacement.
- Computers: Forecasts are estimated based on historical average along with anticipated software and equipment additions.

Q; PLEASE EXPLAIN HOW FORECASTED DEFERRED CHARGES WERE DETERMINED

- A; The Company is forecasting for an decrease to deferred charges from $156,670 in the base year to $93,189 in the FPFTY. CUPA is proposing to include the FY 2022 net book value for deferred assets in rate base. Forecasted methods are detailed below.

- Penn Estates Meters NBV: The amount forecasted for Penn Estates meters is based on the net book value of the meters that were retired upon the installation of the AMR meters in 2017. CUPA is proposing to amortize these costs over a 10-year period. Deferred balance related to the Penn Estates meters is $68,823.

Q; PLEASE EXPLAIN CUPA'S RATIONALE FOR INCLUDING DEFERRED CHARGES IN RATE BASE.

- A: The deferred charges outlined are incurred solely for the benefit of the ratepayers. The cost included in rate base are considered to be reasonable with some of the items being requirements to provide adequate services. The Company is proposing recovery of the deferred charges mentioned above as these charges are incurred in frequencies greater than one year. Cost provided for deferred charges are paid at inception resulting in a negative net present value. Please see refer to the table below for an example. The Company believes earning a return "on" and "of" the deferred assets is necessary to help offset their negative NPV. This allows the Company to easily attract capital necessary to continue providing a reasonable level of service.

Defer and Amortize (in Rate Base)

Year	0	1	2	3	4	5
Tank Inspections	(2,500)	-	-	-	-	(2,500)
Amortization	-	(500)	(500)	(500)	(500)	(500)
Rate Base	2,500	2,000	1,500	1,000	500	2,500
ROE	11%	11%	11%	11%	11%	11%
Cost of Debt	6%	6%	6%	6%	6%	6%
Equity Thickness	50%	50%	50%	50%	50%	50%
Gross Up	71.2%	71.2%	71.2%	71.2%	71.2%	71.2%
Revenue (RC every 2 yrs)	-	-	651	651	576	576
Net Cash Flow	**(2,500)**	**-**	**651**	**651**	**576**	**(1,924)**

Net Present Value (in Rate Base)	($2,262.46)

Defer and Amortize (not in Rate Base)

Year	0	1	2	3	4	5
Tank Inspections	(2,500)	-	-	-	-	(2,500)
Amortization	-	(500)	(500)	(500)	(500)	(500)
Rate Base	-	-	-	-	-	-
ROE	11%	11%	11%	11%	11%	11%
Cost of Debt	6%	6%	6%	6%	6%	6%
Equity Thickness	50%	50%	50%	50%	50%	50%
Gross Up	71.2%	71.2%	71.2%	71.2%	71.2%	71.2%
Revenue (RC every 2 yrs)	-	-	377	377	438	438
Net Cash Flow	**(2,500)**	**-**	**377**	**377**	**438**	**(2,062)**

Net Present Value (not in Rate Base)	($2,861.34)

Q: PLEASE EXPLAIN WHY THE COMPANY IS PROPOSING TO DEFER AND AMORTIZE THE NET BOOK VALUE OF THE PENN ESTATES METER.

- A: The Company is proposing to defer and amortize the net book value of the Penn Estates meter that were retired as the result of the 2017 AMR capital project. Penn Estates depreciates meters over a 30-year period because of this the Company has not had the opportunity to recover the cost of these meters. Deferring and amortizing the book value of the meter assets gives the Company an opportunity to recover the original cost of the assets.

COST OF CAPITAL AND CAPITAL STRUCTURE

Q: PLEASE EXPLAIN CUPA'S FORECASTED CAPTIAL STRUCTURE

- A: The Company is proposing a forecasted capital structure of 52.32% debt and 47.68% equity. The Company included a forecasted cost of debt of 5.05% and cost of equity of 10.35% producing a cost of capital of 7.58%. Please refer to the direct testimony of company witness Dylan D'Ascendis for the development of the cost of equity.

PROPOSED REVENUE INCREASE

Q: PLEASE EXPLAIN THE PROPOSED REVENUE INCREASE.

- A: Section 1, Page 11 of the Company's filing shows the forecasted future test year ended December 31, 2022 net income of $154,716. The proposed rates are calculated to provide the opportunity to earn a 7.58% rate of return on net original cost rate base of $9,093,154. The future test year ended December 31, 2022 revenue requirement is calculated by determining the requested increase in operating income. The requested level of operating income is determined by applying the stipulated rate of return of 7.58% to the proposed rate base as of December 31, 2022 for the Company (shown on Section 1, Page 14 of CUPAW Exhibit No. PAB-1). The requested level of net operating income is $685,866. The operating income is then grossed up for: (a) Federal income taxes, (b) State income taxes and (c) Uncollectibles. The resulting proposed increase in revenue requirements is $757,517.

Q: DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

- A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

CUPA W Exhibit DMC-1

COMMUNITY UTILITIES OF PENNSYLVANIA INC.

RATES, RULES AND REGULATIONS GOVERNING

THE PROVISION OF WATER SERVICE

TO THE PUBLIC IN STROUD AND POCONO TOWNSHIPS IN MONROE COUNTY, A PORTION OF HANOVER TOWNSHIP IN NORTHAMPTON COUNTY, AND PORTIONS OF LEHMAN TOWNSHIP IN PIKE COUNTY,

PENNSYLVANIA

Service Territory Formally Known as Penn Estates Utilities, Inc., Utilities, Inc., and Pennsylvania Utility Company

ISSUED: April 12, 2021 EFFECTIVE: June 12, 2021

ISSUED BY:
Bryce Mendenhall, President
500 W. Monroe Suite 3600
Chicago, IL 60660
(800) 860-4512

NOTICE

THIS TARIFF SUPPLEMENT INCREASES AND CHANGES THE SCHEDULE OF RATES FOR ALL CUSTOMERS IN PENN ESTATES UTILITIES, INC, PENNSYLVANIA UTILITY CO. AND WESTGATE UTILITIES INC. SERVICE TERRITORIES

LIST OF CHANGES

Supplement No. 9 increases the schedule of rates applicable to all metered customers and fire protection customers in accordance with the Pennsylvania Public Utility Commission's Final Order in Docket. No. R-2019-3008947. The increase moves rates toward unitization as stated in the Joint Petition filed at the foregoing docket. The increase in annual operating revenue is intended to produce an additional $757,517 per year

Supplement No. 9 adjusted to reflect charges billed quarterly to be billed on a monthly basis in arrears.

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PART I: SCHEDULE OF RATES AND CHARGES
(Service Territory Formally Known as Penn Estates Utilities, Inc.)

All water supplied by the Company shall be metered and the water usage shall be paid for in accordance with the following schedule of rates:

Section A - Rates for Metered Service

Residential

1. Customer Charge: Each customer will be assessed a customer service charge based upon the size of the customer's meter as follows:

Meter Size		
5/8 inch	$24.84/per month	(I)
1 inch	$50.81/per month	(I)
1 1/2 inch	$94.08/per month	(I)
2 inch	$146.02/per month	(I)

2. Consumption Charge: In addition to the customer charge, the following water consumption charges will apply:

Rate per 1,000 Gals.	$11.93	(I)

3. Consumption Charge (Low-Income): In addition to the customer charge, the following water consumption charges will apply: (C)

Rate per 1,000 Gals. less than 3,500 Gals	$4.13	(C)
Rate per 1,000 Gals. more than 3,500 Gals	$11.93	(C)(I)

Pool

1. Customer Charge: Each customer will be assessed a customer service charge based upon the size of the customer's meter as follows:

Meter Size		
5/8 inch	$24.84/per month	(I)
1 inch	$50.81/per month	(I)
1 1/2 inch	$94.08/per month	(I)
2 inch	$146.02/per month	(I)

2. Consumption Charge: In addition to the customer charge, the following water consumption charges will apply:

Rate per 1,000 Gals.	$10.99	(I)

Rates will be payable in arrears and will be billed monthly.

(I) Indicates Increase
(C) Indicates Change

PART I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Penn Estates Utilities, Inc.)

Clubhouse

1. Customer Charge: Each customer will be assessed a customer service charge based upon the size of the customer's meter as follows:

Meter Size		
5/8 inch	$24.84/per month	(I)
1 inch	$50.81/per month	(I)
1 1/2 inch	$94.08/per month	(I)
2 inch	$146.02/per month	(I)

2. Consumption Charge: In addition to the customer charge, the following water consumption charges will apply:

Rate per 1,000 Gals.	$10.99	(I)

Section B - Fire Protection Rates

1. Private Fire Protection:
   Not applicable.

2. Public Fire Protection:
   No separate fee is charged for public fire protection.

Rates will be payable in arrears and will be billed monthly.

(I) Indicates Increase

PART I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Penn Estates Utilities, Inc.)

Section C - Returned Check Charge
A charge of $25 will be assessed any time where a check which has been presented to the Company for payment on account has been returned by the payor's bank for any reason.

Section D - Availability Rates
The flat rate availability charge for a lot upon which no structure has been erected will be $15.32 (D)
per month. These charges will be payable in arrears and will be billed quarterly.

Section E - Service Termination or Resumption Rates
The fee for shut-off or turn-on of service at the curb stop shall be $30.00 during regular business hours and $75.00 during non-regular business hours.

Section F - Meter Test Rates
Consistent with Commission regulation at 52 Pa. Code §65.8(h), the fee schedule for testing of meters shall be as follows:

1 inch or less	$10.00
1 1/4 inch - 2 inch	$20.00

These amounts may vary without revision of this tariff so as to be consistent with Commission regulations.

Fees for testing meters over 2 inches or for testing meters so located that testing costs are disproportionate to the stated fees shall be as established by the Company based upon the actual cost of the test.

Section G – Tampering Fee
Unauthorized connections, repairs, or other tampering with the system will render the service subject to immediate discontinuation without notice and water service shall not be restored until such unauthorized connections, repairs, and other tampering with the system have been removed and unless settlement is made in full and for water service estimated by the Company to have been used by reason for such unauthorized connection. The fee for these unauthorized connections, repairs, and system tampering shall be $200 plus any actual costs to repair.

(D) Indicates Decrease

PART I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Utilities, Inc. - Westgate)

All water supplied by the Company shall be metered and the water usage shall be paid for in accordance with the following schedule of rates:

Section A - Rates for Metered Residential Service

1. Customer Charge: Each customer will be assessed a customer service charge based upon the size of the customer's meter as follows:

Meter Size		
5/8 inch	$24.84/per month	(I)
1 inch	$50.81/per month	(I)
1 1/2 inch	$94.08/per month	(I)
2 inch	$146.02/per month	(I)

2. Consumption Charge: In addition to the customer charge, the following water consumption charges will apply:

Rate per 1,000 Gals.	$11.93	(I)

3. Consumption Charge (Low-Income): In addition to the customer charge, the following water consumption charges will apply:

Rate per 1,000 Gals. less than 3,500 Gals	$4.13	(C)
Rate per 1,000 Gals. more than 3,500 Gals	$11.93	(C)

(I)

Purchased Water Adjustment Clause
A Purchased Water Adjustment Clause of $0.00 per 1,000 gallons is applied to metered sales.

Section B - Rates for Metered Commercial Service

1. Customer Charge: Each metered commercial customer will be assessed a customer service charge based upon the size of the customer's meter as follows:

Meter Size	Customer Charge per Month	
5/8 inch	$24.84/per month	
1 inch	$50.81/per month	(I)
1 1/2 inch	$94.08/per month	(I)
2 inch	$146.02/per month	(I)

(I)

2. Consumption Charge: In addition to the customer charge, the following water consumption charges will apply: (I)

Rate per 1,000 Gals.	$10.99	

Purchased Water Adjustment Clause (I)
A Purchased Water Adjustment Clause of $0.00 per 1,000 gallons is applied to metered sales.

(I) Indicates Increase
(C) Indicates Change

PART I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Utilities, Inc. - Westgate)

Section C – Fire Protection Rates

1. Public Fire Protection: For public fire protection, the charge shall be $118.73 per hydrant per month. (I)

Section D – Returned Check Charge

A charge of $25 will be assessed any time where a check which has been presented to the Company for payment on account has been returned by the payor's bank for any reason.

Section E – Tampering Fee

Unauthorized connections, repairs, or other tampering with the system will render the service subject to immediate discontinuation without notice and water service shall not be restored until such unauthorized connections, repairs, and other tampering with the system have been removed and unless settlement is made in full and for water service estimated by the Company to have been used by reason for such unauthorized connection. The fee for these unauthorized connections, repairs, and system tampering shall be $200.00 plus any actual costs to repair.

Section F – Service Termination or Resumption Rates

The fee for shut-off or turn-on service at the curb stop shall be $30.00 during regular business hours and $75.00 during non-regular business hours.

Section G – Meter Test Rates

Consistent with Commission regulation at 52 Pa. Code Section 65.8(h), the fee schedule for testing of meters shall be as follows:

1 inch or less	$10.00
1 ¼ inch – 2 inch	$20.00

These amounts may vary without revision of this tariff so as to be consistent with Commission regulations.

Fees for testing meters over 2 inches or for testing meters so located that testing costs are disproportionate to the stated fees shall be as established by the Company based upon the actual cost of the test.

Section H – Construction Rates

The rate charge for building construction shall be at regular tariff metered service rates. A monthly deposit of $20.00, or an amount based on the estimated use for a monthly billing period, will be required in advance.

(I) Indicates increase.

PART I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Utilities, Inc. - Westgate)

Section I - Purchased Water Adjustment Charge

The Company may apply a Purchased Water Adjustment Clause ("PWAC") to its water rates set forth under Schedule of Rates and Charges to reflect an increase or decrease in the rates charged by its wholesale water supplier, the City of Bethlehem ("City").

The PWAC will be calculated based on changes in the customer charges contained in Schedule G Meter Rates-Sales for Resale of the City's Tariff Water PA. P.U.C. No. 6. For purposes of calculating the PWAC, the amount collected or refunded will be the difference between the consumption charge rate per 1,000 gallons contained in the Company's Schedule of Rates and Charges and the customer charges contained in Schedule G of the City's tariff. The Company will revise the Tariff consumption charge in its base rate cases to mirror the customer charges in Schedule G of the City's tariff and set its PWAC to zero. Between rate cases, the Company will use the PWAC to reflect changes in the rates contained in Schedule G of the City's tariff. The Company will provide notice to its customers of changes in rates resulting from application of the PWAC.

The baseline items determined in the Company's most recent PWAC calculation:

(50,434,644 gallons X $3.969/1,000gallon) + ($17,486.52 fixed charges) = $217,661.62 (C)

Determination of Purchased Water Adjustment Charge

A PWAC may be implemented on the effective date of a change in the City's wholesale rates charged to the Company for purchased water but not on less than 45 days notice to the customer. The Company may, at its option, implement a PWAC to recover an increase in purchased water costs. However, if the rate change is a decrease, the Company must implement a credit PWAC to reflect the decrease.

The items used to calculate the PWAC are:

A. The projected cost of the volume of water purchased from the City in the prior 12 months at the City's revised rate per 1,000 gallons.

(C) - Indicates Change

Part I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Public Utility Company – Lehamn Township, Pike County)

Section A - Rates for Service
The charge per residential dwelling unit for water service per quarter as follows:

Residential (Metered Rate):

1. Customer Charge: Each customer will be assessed a customer service charge based upon the size of the customer's meter as follows:

Meter Size		
5/8 inch	$24.84/per month	(C)
1 inch	$50.81/per month	(C)
1 1/2 inch	$94.08/per month	(C)
2 inch	$146.02/per month	(C)
6 inch	$873.09/per month	(C)

2. Consumption Charge: In addition to the customer charge, the following water consumption charges will apply:

Rate per 1,000 Gals.	$11.93	(I)

3. Consumption Charge (Low-Income): In addition to the customer charge, the following (C) water consumption charges will apply:

Rate per 1,000 Gals. less than 3,500 Gals	$4.13	(C)
Rate per 1,000 Gals. more than 3,500 Gals	$11.93	(I)

Commercial (Metered Rate):

Customer Charge: Each metered commercial customer will be assessed a customer service charge based upon the size of the customer's meter as follows:

Meter Size	Customer Charge per Month	
5/8 inch	$24.84/per month	(C)
1 inch	$50.81/per month	(C)
1 1/2 inch	$94.08/per month	(C)
2 inch	$146.02/per month	(C)

2. Consumption Charge: In addition to the customer charge, the following water consumption charges will apply:

Rate per 1,000 Gals.	$10.99	(C)

(C) - Indicates Change
(I) - Indicates Increase

Part I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Public Utility Company – Lehamn Township, Pike County)

Booster Pumps. In certain sections of the development, customers will be required to install booster pumps to maintain adequate pressures. In such circumstances where booster pumps are required, it shall be the customer's responsibility to purchase, install, operate, maintain, repair and replace the booster pump at each residential premises.

Section B - Availability Rates

The flat rate availability charge for a lot upon which no structure has been erected will be $15.32 per month. These charges will be payable in arrears and will be billed quarterly. (C)

(C) - Indicates Change

Community Utilities of Pennsylvania Inc.
Water Division

Supporting Data
for
Docket No. R-2021-3025206

By

David Clark
Financial Analyst II

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Community Utilities of Pennsylvania Inc.
Water Division
R-2021-3025206
Statement of Reasons for Rate Increase
Answer to 52 PA. Code 53.52 (b) (1)

Community Utilities of Pennsylvania – Water Operations

Community Utilities of Pennsylvania Inc. ("Company") filed Supplement No. 9 to Tariff Water – Pa. P.U.C. No. 1. on April 12th, 2021 with a requested effective date of June 12th, 2021 for the purpose of increasing water service revenue by $757,517 per annum which represents a 36.85% increase over the service revenues previously generated by the service territories formally known as Penn Estates Utilities, Inc., Utilities Inc. – Westgate, and Pennsylvania Utility Company.

For the twelve months ended December 31, 2020, December 31, 2021, and December 31, 2022, respectively, utility operations produced book net income, forecasted net income under present rates, and fully projected pro-forma net income under proposed rates as follows:

Period	Net Income/(Loss)	Reference
Base Year per Books (12/31/2020)	($178,509)[1]	Section 1 (pp. 1-19)
Future Test Year (12/31/2021)	$1,502[1]	Section 1 (pp. 1-19)
Future Test Year (12/31/2022)	($85,751)[1]	Section 1 (pp. 1-19)
Pro-Forma Proposed (12/31/2022)	$445,414[2]	Section 1 (pp. 1-19)

The current rate filing is necessary to realize a reasonable rate of return on the Company's actual and forecasted capital investment and recover forecasted operating expenses. The factors given consideration in calculating the proposed increase are set forward in the following narrative.

Operating Revenues

The per books operating revenue for the twelve months ended December 31, 2020 totaled $1,993,823. The Company performed a billing analysis to reflect the proper level of service revenue for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022. The analysis produced an adjustment that resulted in an overall increase in service revenue of $40,338 for the twelve months

[1] Present rates
[2] Proposed rates

ended December 31, 2021 and an overall decrease in service revenue of $18,226 for the twelve months ended December 31, 2022. These adjustments, combined with projected levels of miscellaneous revenues, forfeited discounts, and uncollectible accounts produce pro-forma operating revenue under present rates of $2,068,810 and $2,050,584 for the twelve months ended December 31, 2021, and December 31, 2022 respectively. After accounting for the increase in uncollectible accounts ($5,511) related to the Company's revenue request of $757,517, the Company's proposed fully projected test year operating revenue is $2,802,568.

Operating Expenses

For the twelve months ended December 31, 2020, December 31, 2021, and December 31, 2022, respectively, utility operations produced per book, forecasted, and fully projected pro-forma operating expenses as follows:

Period	Operating Expense	Reference
Base Year Per books (12/31/2020)	$2,022,841	Section 1 (pp. 1-11)
Future Test Year (12/31/2021)	$1,852,165	Section 1 (pp. 1-11)
Future Test Year (12/31/2022)	$1,895,868	Section 1 (pp. 1-11)
Fully projected (12/31/2022)	$2,116,703	Section 1 (pp. 1-11)

The Company has projected net increased operating expenses of $93,862 between the base year ended December 31, 2020 and the fully projected future test year ended December 31, 2022 as reflected in response to tariff Regulation c (1) Sheets1b and 1c.

Original Cost – Plant in Service

The original costs of the plant in service at December 31, 2020 were compiled through Company records. The gross plant in service per books at the end of the base year is $13,579,565. Pro-forma plant additions of $1,286,300 and $1,293,758 for the future test years ended December 31, 2021, and December

31, 2022 respectively have been included on Tariff Regulation (c) (3) to reflect the fully projected future test year level of utility plant in service as of December 31, 2022.

Accumulated Depreciation and Annual Depreciation Expense

The calculations of annual and accumulated depreciation are based upon the straight-line method. An adjustment has been made to calculate pro-forma depreciation expense and the level of pro-forma accumulated depreciation using class of asset rates on the Company's books, going level, as well as, projected plant in service as of December 31, 2021, and December 31, 2022. This adjustment results in an increase to depreciation expense of $82,883 and increase of $38,955 for the future test years ended December 31, 2021, and December 31, 2022 respectively. The pro-forma accumulated depreciation amounts to $4,573,309 and $4,948,852 as of December 31, 2021, and December 31, 2022 respectively. Please see Supporting Schedules No. 4 and No. 9 in Section 2.

Calculation of Rate Base

Eight elements were used to determine rate base for the Company have been included on Tariff Regulation (c) (3). They are as follows:

I. Net Plant in Service
II. Cash Working Capital
III. Contributions in Aid of Construction (Net)
IV. Accumulated Deferred Income Taxes
V. Customer Deposits
VI. Net Plant Acquisition Adjustment
VII. Deferred Charges
VIII. Pro forma Plant Additions (Net of Retirements)

I. Net Plant in Service

Net Plant in Service was determined by deducting pre-books and pro forma accumulated depreciation from per books and pro forma gross utility plant in service as of December 31, 2020, December 31, 2021, and December 31, 2022.

Community Utilities of Pennsylvania Inc.
Water Division
R-2021-3025206
Statement of Reasons for Rate Increase
Answer to 52 PA. Code 53.52 (b) (1)

Water Operations	Supporting Schedule No.	Per Books Base Year Ended 12/31/2020	Future Test Year Ended 12/31/2021	Pro-forma FPFTY Ended 12/31/2022
Utility Plant in Service	(c)(3)	$ 12,772,225	$ 14,865,865	$ 16,159,623
Accumulated Depreciation	(c)(4)	(4,236,721)	(4,573,309)	(4,948,852)
Net Utility Plant:		$ 8,535,504	$ 10,292,556	$ 11,210,771

II. Cash Working Capital

The amount included for Cash Working Capital is based on 1/8 method using per books and pro forma operating and maintenance expenses of $1,822,550, $,1,560,225, and $1,603,586 for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022 respectively resulting in cash working capital levels of $227,819, $195,028, and $200,448 for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022 respectively. Please see Supporting Schedules No. 11 in Section 2.

III. Contribution in Aid of Construction

The amount included in Contributions in Aid of Construction are per books and projected pro-rated amounts of ($1,296,000), ($1,265,498), and ($1,234,996) for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022.

IV. Accumulated Deferred Income Taxes

The amount included in Accumulated Deferred Income Taxes are per books and projected pro-rated amounts of ($429,861), ($439,887), and ($454,825) for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022.

V. Customer Deposits

The amount included in Customer Deposits are per books ($1,542), for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022 respectively.

VI. Plant Acquisition Adjustment

The amount included in Plant Acquisition Adjustment is the per books number net of accumulated amortization as of December 31, 2020 and amounts to ($655,405). Net PAA is rolled forward to December 31, 2021 and December 31, 2022 using current amortization rates and result in Net PAA of ($755,960) and ($719,891) for the test years ended December 31, 2021, and December 31, 2022 respectively

VII. Deferred Charges

The amount included in Deferred Charges are per books and projected pro-rated amounts of $156,670, $111,381, and $93,189 for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022.

Rate of Return

The Company uses the capital structure of its parent company, Utilities, Inc. to calculate its rate of return. Utilities Inc.'s capital structure as of December 31st, 2020 is as follows:

Debt	$342,293,595
Common Equity	311,966,040
Total Capital	$654,259,635

For December 31, 2022, the Company adopts a 52.32% debt-to-equity capital ratio and 5.05% cost of debt. The Company has utilized an overall 7.58% weighted average cost of capital and 10.35% cost of equity for this application.

Tariff Design

Community Utilities is proposing to consolidate rates between its three service territories formally known as Penn Estates Utilities, Inc. and Utilities, Inc. – Westgate, and Tamiment. The overall proposed increase in an average 5/8" meter size customer's bill is approximately 30.87% for customers of the

formally known territories of Penn Estates Utilities, Inc. and Utilities, Inc. – Westgate, and an increase of 76.20% for customers of the formally known territory of Tamiment as follows:

Community Utilities of Pennsylvania
Average Bills

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Line	Name	W/WW	Class	Meter Size	12/31/20Average Usage	BFC	Usage Rate	PWAC Surcharge	Average Bill	12/31/22 Average Usage	Proposed BFC*	Proposed Usage*	Proposed Average Bill	Proposed Increase	Increase %	Average Bill	Proposed Average Bill	Proposed Increase	Increase %
1.	CUPA Consolidated Service Territori	W	RES	5/8"	4,089	$ 17.25	$ 9.28	$ -	$ 55.21	3,976	$ 24.84	$ 11.93	$ 72.26	$ 17.05	30.87%	$ 55.21	$ 72.26	$ 17.05	30.87%
2.	Tamiment Service Territory	W	RES	5/8"	2,816	$ 18.18	$ 5.13	$ -	$ 32.63	2,738	$ 24.84	$ 11.93	$ 57.49	$ 24.86	76.20%	$ 32.63	$ 57.49	$ 24.86	76.20%
3.	Low Income Customer	W	RES	5/8"	3,498	$ 17.25	$ 9.28	$ -	$ 49.72	3,500	$ 24.84	$ 4.13	$ 39.28	$ (10.44)	-21.00%	$ 49.72	$ 39.28	$ (10.44)	-21.00%

A billing analysis at present rates was prepared for the twelve months ended December 31, 2020, December 31, 2021, and December 31, 2022. The Calculations are contained in supporting Schedule No. 1. The results of that analysis were used to prepare proof of revenues for the proposed rates contained in supporting Schedule No. 2. The allocation of the proposed revenues is shown in response to tariff Regulation (b) (4).

General Comments

Community Utilities of Pennsylvania water service territories the Company is forecasting for operating and maintenance expenses to increase of 5% and is forecasted to spend $2.5 million in capital through the December 31, 2022 fully projected future test year. The Company's water service territories have experienced an average declining consumption of 1.39% over the last 12 years as a result of consumer conservation efforts along with advances in household technology. The proposed level of operating revenue will allow the Company enough revenue to meet debt obligations and recover reasonable levels of operating cost and capital investments. The Increased revenue for Community Utilities of Pennsylvania Inc.'s water division will also ensure continued safe and adequate service to its customers.

Community Utilities of Pennsylvania Inc.
Water Operations
Operating Revenue for the Base Year Ended December 31, 2020 Under Present Rates,
the Future Test Year Ended December 31, 2021, and the FPFTY Ended December 31, 2022. Under Present Rates
Answer to 52 Pa. Code 53.52 (b)(2)

Water Operations Customer Classification	Base Year Ended 12/31/2020	Pro-forma Revenue at Present Rates Future Test Year Ended 12/31/2021	Pro-forma Revenue at Present Rates FPFTY Ended 12/31/2022
Volumetric Revenue			
Residential	$ 1,312,552	$ 1,294,307	$ 1,276,316
Commercial	18,296	18,041	17,806
Total Volumetric Revenue	1,330,847	1,312,349	1,294,122
Flat/Base Rate Revenue			
Residential	$ 687,585	$ 687,585	$ 687,585
Commercial	17,562	17,562	17,562
Availability	35,394	35,394	35,394
Fire Hydrant	24,831	20,929	20,929
Total Flat Rate Revenue	765,372	761,470	761,470
Forfeited Discounts	(1,407)	6,137	6,137
Miscellaneous Service Revenues	4,905	3,810	3,810
Purchased Services	-	-	-
Accruals	(56,290)	-	-
Total Operating Revenues	$ 2,043,427	$ 2,083,765	$ 2,065,539

Community Utilities of Pennsylvania Inc.
Water Operations
Number of Customer Equivalents served at December 31, 2020,
and the Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (b)(3)

Water Operations Customer Classification		Total Customers 12/31/2020	Pro-forma Customers 12/31/2021	Pro-forma Customers 12/31/2022
Customers	[1]			
Residential		3,191	3,191	3,191
Commercial		50	50	50
School		0	0	0
Availability		110	110	110
Fire Hydrant (# of Hydrants)		61	61	61
Total Flat Rate Customers		3,412	3,412	3,412

Community Utilities of Pennsylvania Inc.
Water Operations
Statement of Operating Revenue Under the Existing and Proposed Rates for the Base Year Ended
December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (b)(4)

Water Operations	Schedule Number	Base Year Ended 12/31/2020	Change	Future Test Year Ended 12/31/2021	Change	Future Test Year Ended 12/31/2022	Change	Proposed FPFTY Ended 12/31/2022
Volumetric Revenue	(b)(2)							
Residential	(b)(2)	$ 1,312,552	$ (18,244)	$ 1,294,307	$ (17,991)	$ 1,276,316	$ 340,735	$ 1,617,052
Commercial	(b)(2)	18,296	(254)	18,041	(235)	17,806	4,309	22,115
Total Volumetric Revenue		$ 1,330,847	$ (18,499)	$ 1,312,349	$ (18,226)	$ 1,294,122	$ 345,044	$ 1,639,167
Flat/Base Rate Revenue								
Residential	(b)(2)	$ 687,585	$ -	$ 687,585	$ -	$ 687,585	$ 294,465	$ 982,050
Commercial	(b)(2)	17,562	-	17,562	-	17,562	17,312	34,874
Availability	(b)(2)	35,394	-	35,394	-	35,394	33,266	68,660
Fire Hydrant	(b)(2)	24,831	(3,902)	20,929	-	20,929	67,408	88,336
Total Flat Rate Revenue		765,372	(3,902)	761,470	-	761,470	412,451	1,173,921
Forfeited Discounts	(b)(2)	$ (1,407)	$ 7,544	$ 6,137	$ -	$ 6,137	$ -	$ 6,137
Miscellaneous Service Revenues	(b)(2)	4,905	(1,095)	3,810	-	3,810	-	3,810
Purchased Services	(b)(2)	-	-	-	-	-	-	-
Accruals	(b)(2)	(56,290)	56,290	-	-	-	-	-
Total Operating Revenues		$ 2,043,427	$ 40,338	$ 2,083,765	$ (18,226)	$ 2,065,539	$ 757,495	$ 2,823,034

Going Level Adjustments [1]

Customer Classification	
Residential	$ (18,244)
Commercial	(254)
School	
Availability	-
Commercial	-
Availability	-
Fire Hydrant	(3,902)
See supporting Schedule No. 1	$ (22,401)

Future Test Year Ended 12/31/22 Adjustments [1]

Customer Classification	
Residential	$ (17,991)
Commercial	(235)
School	
Availability	-
Commercial	-
Availability	-
Fire Hydrant	-
See supporting Schedule No. 2	$ (18,226)

FPFTY Ended 12/31/22 Adjustments

Volumetric Revenue	
Residential	$ 340,735
Commercial	$ 4,309
Flat/Base Rate Revenue	
Residential	294,465
Commercial	17,312
Availability	33,266
Fire Hydrant	67,408
See supporting Schedule No. 2	$ 757,495

Community Utilities of Pennsylvania Inc.
Water Division
Whose Bills will be Decreased Under the Proposed Tariff
for the Twelve Months Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (b)(5)

Under the proposed tariff, no Community Utilities of Pennsylvania water customer will receive a bill decrease

Community Utilities of Pennsylvania Inc.
Water Operations
Statement of Net Operating Income Under the Existing and Proposed Rates for the Base Year Ended
December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and the FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1a

Water Operations	Schedule Number	Per Books Base Year Ended 12/31/2020	Change	Future Test Year Ended 12/31/2021	Change	Future Test Year Ended 12/31/2022	Change	Proposed FPFTY Ended 12/31/2022
Operating Revenue								
Gross Operating Revenue	(b)(2)	$ 2,043,427	$ 40,338	$ 2,083,765	$ (18,226)	$ 2,065,539	$ 757,495	$ 2,823,034
Allowance for Uncollectible Accounts	Sup. Sch. No.3	(49,603)	34,648	(14,955)	-	(14,955)	(5,511)	(20,466)
Net Operating Revenue		1,993,823	74,987	2,068,810	(18,226)	2,050,584	751,984	2,802,568
Operating Expenses								
Operating Expenses	(c)(1) - Sheet No. 1b	$ 1,784,602	$ (268,958)	$ 1,515,644	$ 31,815	$ 1,547,459	$ -	$ 1,547,459
Depreciation	Sup. Sch. No. 4	253,705	82,883	336,588	38,955	375,543	-	375,543
Amortization of CIAC	Sup. Sch. No. 4	(37,633)	7,130	(30,502)	-	(30,502)	-	(30,502)
Amortization of PAA	Sup. Sch. No. 4	(43,334)	7,265	(36,069)	-	(36,069)	-	(36,069)
Taxes Other than Income	Sup. Sch. No. 5	57,416	8,477	65,893	8,385	74,279	5,015	79,294
Income Taxes								
Federal Income Tax	Sup. Sch. No. 6	$ 7,419	$ (7,020)	$ 399	$ (23,194)	$ (22,794)	$ 141,196	$ 118,401
State Income Tax	Sup. Sch. No. 6	665	(454)	$ 211	(12,258)	(12,047)	74,624	62,577
Total Operating Expenses		2,022,841	(170,676)	1,852,165	43,703	1,895,868	220,835	2,116,703
Net Operating Income		$ (29,017)	$ 245,663	$ 216,646	$ (61,929)	$ 154,716	$ 531,149	$ 685,866

Community Utilities of Pennsylvania Inc.
Water Operations
Statement of Operating Expenses for the Base Year Ended December 31, 2020,
the Future Test Year Ended December 31, 2021, and the FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1b

Water Operations

NARUC Acct. No.	Account Description	Per Books Base Year Ended 12/31/20	Per Book & Going Level Adjustments No.	Per Book & Going Level Adjustments Amount	Pro Forma Expenses at Going Rates 12/31/2021	Per Book & Going Level Adjustments No.	Per Book & Going Level Adjustments Amount	Pro Forma Expenses at Going Rates 12/31/2022
701	Water - Salaries & Wages - Employees	$ 381,480	1,2	$ (4,576)	$ 376,904	1,2	$ 19,296	$ 396,201
704	Water - Employee Pensions & Benefits	76,463	3	28,358	104,821	3	7,169	111,990
711	Water - Sludge Hauling & Sewer Rodding	-	4	-	-	4	-	-
615	Water - Purchased Power	120,160	5	(16,295)	103,865	5	2,245	106,110
610	Water - Purchased Water	263,128	6	(42,003)	221,125	6	(3,462)	217,663
718	Water - Chemicals	85,106	7	19,395	104,502	7	9,397	113,899
720	Water - Materials, Supplies, and Other Maintenance Expense	265,020	8	(141,585)	123,435	8	(6,492)	116,943
731	Water - Engineering Fees	20,317	9	(10,601)	9,716	9	237	9,953
732	Water - Contractual Services - Accounting	-	10	-	-	10	-	-
733	Water - Contractual Services - Legal	5,786	11	(2,028)	3,758	11	58	3,815
736	Water - Contractual Services - Other	364,541	12	(89,858)	274,682	12	(2,360)	272,323
741	Water - Rental of Building/Real Property	2,565	13	(1,924)	641	13	(641)	-
750	Water - Transportation Expenses	24,408	14	(1,722)	22,686	14	(105)	22,580
759	Water - Insurance - Other	33,028	15	12,156	45,184	15	5,550	50,734
760	Water - Advertising Expense	-	16	-	-	16	-	-
675	Water - Office Utilities, Supplies & Other Office Expenses	49,298	17	(2,509)	46,789	17	(1,593)	45,196
766	Water - Regulatory Commission Expenses - Amortization of Rate Case Expense	26,331	18	10,378	36,709	18	-	36,709
767	Water - Regulatory Commission Expenses - Other	12,820	19	(12,820)	-	19	-	-
775	Water - Testing, Meter Reading, and Miscellaneous Expense	$ 54,151	20	$ (13,325)	$ 40,827	20	$ 2,516	$ 43,343
	Total Operating and Maintenance Expenses	$ 1,784,602		$ (268,958)	$ 1,515,644		$ 31,815	$ 1,547,459

Community Utilities of Pennsylvania Inc.
Water Division
Adjustments to (c)(1) Sheet 1b
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1c

Going Level Adjustments [1]		2021		2022
1 An adjustment is required to reflect the forecasted level of salary expense.				
Going Level Adjustment	$	21,563	$	19,085
2 An adjustment is required to reflect the forecasted level of Capitalized Time Charged to Plant for employees allocated to Community Utilities of PA Inc.				
Going Level Adjustment	$	(26,139)	$	211
3 An adjustment is required to reflect the forecasted level of Pension and Benefits for Employees Allocated to Community Utilities of PA Inc.				
Going Level Adjustment	$	28,358	$	7,169
4 An adjustment is required to reflect the forecasted level of Sludge Hauling and Sewer Rodding expense for territories providing wastewater service to Community Utilities of PA Inc. customers.				
Going Level Adjustment	$	-	$	-
5 An adjustment is required to reflect the forecasted level of Electric expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	(16,295)	$	2,245
6 An adjustment is required to reflect the forecasted level of Purchased Water expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	(42,003)	$	(3,462)
7 An adjustment is required to reflect the forecasted level of Chemical expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	19,395	$	9,397
8 An adjustment is required to reflect the forecasted level of Maintenance expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	(141,585)	$	(6,492)
9 An adjustment is required to reflect the forecasted level of Engineering fees to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	(10,601)	$	237

[1] "Adjustment" refers to the change between periods and is not meant to imply there was an "adjustment" to the base period.

10	An adjustment is required to reflect the forecasted level of Accounting fees to be allocated to Community Utilities of PA Inc.			
	Going Level Adjustment	$ -	$ -	
11	An adjustment is required to reflect the forecasted level of outside Legal expense to be allocated to Community Utilities of PA Inc.			
	Going Level Adjustment	$ (2,028)	$ 58	
12	An adjustment is required to reflect the forecasted level of other Contractual services expenses to be allocated to Community Utilities of PA Inc.			
	Going Level Adjustment	$ (89,858)	$ (2,360)	
13	An adjustment is required to reflect the forecasted level of Rent expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ (1,924)	$ (641)	
14	An adjustment is required to reflect the forecasted level of Transportation expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ (1,722)	$ (105)	
15	An adjustment is required to reflect the forecasted level of Insurance expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ 12,156	$ 5,550	
16	An adjustment is required to reflect the forecasted level of Advertising expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ -	$ -	
17	An adjustment is required to reflect the forecasted level of Office Utilities expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ (2,509)	$ (1,593)	
18	An adjustment is required to normalize Estimated Rate Case expense for this filing over three years.			
	Going Level Adjustment	$ 10,378	$ -	
19	An adjustment is required to eliminate outside regulatory commission expense.			
	Going Level Adjustment	$ (12,820)	$ -	
20	An adjustment is required to reflect the forecasted level of Testing, Meter Reading, and other miscellaneous expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ (13,325)	$ 2,516	

[1] "Adjustment" refers to the change between periods and is not meant to imply there was an "adjustment" to the base period.

Community Utilities of Pennsylvania Inc.
Water Operations
Statement of the Calculation of the Rate of Return Under the Present and Proposed Rates for the Base Year Ended December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 2

Water Operations	Supporting Schedule No.	Pro-forma Present 12/31/2020	Future Test Year 12/31/2021	Future Test Year 12/31/2022	Proposed FPFTY 12/31/2022
Utility Plant In Service	(c)(3)	$ 13,579,565	$ 13,579,565	$ 13,579,565	$ 13,579,565
Less:					
Accumulated Depreciation	(c)(4)	(4,236,721)	(4,573,309)	(4,948,852)	(4,948,852)
Net Plant In Service		9,342,844	9,006,256	8,630,713	8,630,713
Less:					
Contributions in Aid of Construction (Net)		(1,296,000)	(1,265,498)	(1,234,996)	(1,234,996)
Net Plant Acquisition Adjustment		(655,405)	(755,960)	(719,891)	(719,891)
Customer Deposits		(929)	(1,542)	(1,542)	(1,542)
Accumulated Deferred Income Taxes		(429,861)	(439,887)	(454,825)	(454,825)
Add:					
Proforma Level of Plant		-	1,286,300	2,580,058	2,580,058
Deferred Charges		156,670	111,381	93,189	93,189
Cash Working Capital	11	227,819	195,028	200,448	200,448
Total Rate Base		$ 7,345,138	$ 8,136,079	$ 9,093,154	$ 9,093,154
Net Operating Income	(c)(1) Sheet 1a	(29,017)	216,646	154,716	685,866
Percent Pro-forma Return		-0.40% [1]	2.66% [1]	1.70% [1]	7.54% [1]

[1] Net Operating Income over Total Rate Base.

Community Utilities of Pennsylvania Inc.
Water Division
Assets and other Debits as of the Base Year Ended December 31, 2020 and Pro-forma Balance Sheets
for the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(2) - Sheet No. 1

Water Operations

Account	Per Books Base Year Ended 12/31/2020		Future Test Year Ended 12/31/2021		Pro-forma FPFTY Ended 12/31/2022	
Net Utility Plant						
Utility Plant in Service	$ 12,772,225		$ 14,865,865		$ 16,159,623	
Accumulated Depreciation	(4,236,721)	8,535,504	(4,573,309)	10,292,556	(4,948,852)	11,210,771
Purchased Acquisition Adjustment (Net)		(655,405)		(755,960)		(719,891)
Work in Progress (Net)		807,340		-		-
Current & Accrued Assets						
Cash	-		-		-	
Accounts Receivable (Net)	385,774		385,774		385,774	
Other Current Assets	(3,660,980)		(3,660,980)		(3,660,980)	
Deferred Charges	156,670	(3,118,536)	146,837	(3,128,368)	110,128	(3,165,077)
Total Assets		$ 5,568,903		$ 6,408,228		$ 7,325,802

Community Utilities of Pennsylvania Inc.
Water Operations
Assets and other Debits as of the Base Year Ended December 31, 2020 and Pro-forma Balance Sheets for the Future Test Year Ended December 31, 2021 and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(2) - Sheet No. 2

Water Operations

Account	Per Books Base Year Ended 12/31/2020			Future Test Year Ended 12/31/2021			Pro-forma FPFTY Ended 12/31/2022		
Equity Capital									
Common Stock and Paid In Capital			$ 1,048,276			$ 1,048,276			$ 1,048,276
Retained Earnings			1,834,715			1,914,005			1,914,574
Current and Accrued Liabilities									
Accounts Payable-Trade	106,538			106,538			106,538		
Taxes Accrued	15,741			15,741			15,741		
Customer Deposits	(929)			(929)			(929)		
Customer Deposits - Interest	(191)			(191)			(191)		
Advances from Utilities, Inc.	-			-			-		
A/P - Assoc. Companies	838,891	960,051		1,619,403	1,740,563		2,551,971	2,673,132	
Contributions in Aid of Construction		1,296,000			1,265,498			1,234,996	
Accumulated Deferred Income Tax									
Deferred Tax - Federal	375,700			382,259			392,032		
Deferred Tax - State	54,161	429,861	2,685,912	57,628	439,887	3,445,947	62,793	454,825	4,362,952
Total Capitalization & Liabilities			$ 5,568,903			$ 6,408,228			$ 7,325,802

Community Utilities of Pennsylvania Inc.
Water Operations
Original Cost Utility Plant in Service for the Base Year Ended December 31, 2020
Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(3)

Water Operations

NARUC Acct. No.	Account Description	Per Books Base Year Ended 12/31/2020	Future Test Year 2021 GL Additions & Pro-forma Plant	Future Test Year 2021 Retirements [1]	Pro Forma Plant Future Test Year Ended 12/31/2021	FPFTY 2022 GL Additions & Pro-forma Plant	FPFTY 2022 Retirements [1]	Pro Forma Plant FPFTY Ended 12/31/2022
301.1	WATER - ORGANIZATION	$ 235,119	$ -	$ -	$ 235,119	$ -	$ -	$ 235,119
302.1	WATER - FRANCHISES	6,608	-	-	6,608	-	-	6,608
303.2	WATER - LAND & LAND RIGHTS PUMP	-	-	-	-	-	-	-
303.3	WATER - LAND & LAND RIGHTS WTR TRT	-	-	-	-	-	-	-
303.4	WATER - LAND & LAND RIGHTS TRANS DIST	-	-	-	-	-	-	-
303.5	WATER - LAND & LAND RIGHTS GEN PLT	44,502	219	-	44,721	228	-	44,950
304.2	WATER - STRUCT & IMPRV SRC SUPPLY	173,872	136,890	(199)	310,563	206,768	(207)	517,124
304.3	WATER - STRUCT & IMPRV WTR TRT PLT	39,170	229,312	-	268,483	1,138	-	269,620
304.4	WATER - STRUCT & IMPRV TRANS DIST PLT	12,015	1,690	-	13,704	1,762	-	15,466
304.5	WATER - STRUCT & IMPRV GEN PLT	335,890	211	-	336,100	220	-	336,320
305.2	WATER - COLLECTING RESERVOIRS	-	-	-	-	-	-	-
307.2	WATER - WELLS & SPRINGS	808,681	34,316	(2,262)	840,735	16,210	(2,359)	854,586
309.2	WATER - SUPPLY MAINS	130,963	1,672	-	132,635	1,743	-	134,378
310.2	WATER - POWER GENERATION EQUIP	1,056	-	-	1,056	-	-	1,056
311.2	WATER - ELECTRIC PUMP EQUIP SRC PUMP	87,914	90,788	(35,782)	142,919	94,689	(37,320)	200,289
311.3	WATER - ELECTRIC PUMP EQUIP WTP	374,393	16,592	(3,435)	387,550	17,305	(3,582)	401,273
311.4	WATER - ELECTRIC PUMP EQUIP TRANS DIST	9,260	262	-	9,522	273	-	9,795
320.3	WATER - WATER TREATMENT EQPT	137,810	7,416	(2,982)	142,244	7,735	(3,110)	146,869
330.4	WATER - DIST RESV & STANDPIPES	1,840,300	6,503	(24)	1,846,779	6,783	(25)	1,853,537
331.4	WATER - TRANS & DISTR MAINS	4,951,038	102,334	(917)	5,052,455	729,066	(957)	5,780,564
333.4	WATER - SERVICE LINES	840,651	48,815	(7,663)	881,803	50,912	(7,992)	924,723
334.4	WATER - METERS	816,500	19,462	(2,373)	833,589	20,298	(2,475)	851,412
334.4	WATER - METER INSTALLATIONS	95,808	8,343	-	104,150	8,701	-	112,851
335.4	WATER - HYDRANTS	545,882	353,547	(4,542)	894,888	31,411	(4,737)	921,561
336.4	WATER - BACKFLOW PREVENTION DEVICES	232	-	-	232	-	-	232
339.3	WATER - OTH PLT&MISC EQUIP WTP	1,260	-	-	1,260	-	-	1,260
304.5	WATER - OFFICE STRUCT & IMPRV	96,223	61,604	-	157,827	21,912	-	179,739
340.5	WATER - OFFICE FURN & EQPT	49,251	2,463	-	51,714	2,564	-	54,278
343.5	WATER - STORES EQUIPMENT	8,095	56	-	8,151	58	-	8,209
343.5	WATER - TOOL SHOP & MISC EQPT	174,557	32,364	(13,495)	193,426	33,754	(14,074)	213,106
344.5	WATER - LABORATORY EQUIPMENT	26,755	4,368	(74)	31,049	4,555	(77)	35,528
345.5	WATER - POWER OPERATED EQUIP	39,622	1,191	-	40,814	1,242	-	42,056
346.5	WATER - COMMUNICATION EQPT	159,914	694	(97)	160,511	86,716	(102)	247,125
347.5	WATER - MISC EQUIPMENT	17,228	47	-	17,275	49	-	17,324
392.7	WATER - STORES EQUIPMENT	-	339	(35)	304	354	(37)	621
341.5	WATER - TRANSPORTATION EQPT	215,649	16,026	-	231,674	-	-	231,674
340.5	WATER - DESKTOP COMPUTER	53	-	-	53	-	-	53
340.5	WATER - MAINFRAME COMPUTER	11,797	-	-	11,797	-	-	11,797
340.5	WATER - MINI COMPUTERS	111,170	-	-	111,170	-	-	111,170
340.5	WATER - COMP SYS COST	361,154	182,657	-	543,811	24,364	-	568,174
340.5	WATER - MICRO SYS COST	6,103	-	-	6,103	-	-	6,103
348.5/398.7	WATER - OTHER PLANT	5,730	-	-	5,730	-	-	5,730
	Total Plant in Service	$ 12,772,224	$ 1,360,180	$ (73,880)	$ 14,058,524	$ 1,370,812	$ (77,054)	$ 15,352,282

[1] Per Books and General Ledger Additions amounts are net of retirements.

Community Utilities of Pennsylvania Inc.
Water Division
Reserve for Depreciation of Utility Plant
the Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(4)

Water Operations	Adjustment	[1]	Base Year Ended 12/31/2021 Total	Adjustment	[1]	Future Test Year Ended 12/31/2022 Total
Per Books Reserve for Depreciation			$ 4,236,721			$ 4,573,309
Accumulated Depreciation Adjustments:						
Pro-forma Plant A/D	$ 277,742			$ 303,716		
Computers	38,793			53,765		
Vehicles	20,052		$ 336,588	18,061		$ 375,543
Pro-forma Reserve for Depreciation			$ 4,573,309			$ 4,948,852

Community Utilities of Pennsylvania Inc.
Water Division
Statement of Operating Income Setting Forth the Operating Revenues at Present Rates by Detail Accounts for the Base Year Ended December 31, 2020, the Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(5)

Water Operations	Per Books for the Base Year Ended 12/31/2020	Future Test Year Ended 12/31/2021	Future Test Year Ended 12/31/2022	Pro Forma FPFTY Ended 12/31/2022
Operating Revenue				
Gross Operating Revenue	$ 2,046,393	$ 2,083,765	$ 2,065,524	$ 2,823,034
Allowance for Uncollectible Accounts	(49,603)	(14,955)	(14,955)	(20,466)
Net Operating Revenue	1,996,790	2,068,810	2,050,568	2,802,568
Operating Expenses				
Operating Expenses	$ 1,784,602	$ 1,515,644	$ 1,547,459	$ 1,547,459
Depreciation	$ 253,705	$ 336,588	$ 375,543	$ 375,543
Amortization of PAA	$ (43,334)	$ (36,069)	$ (36,069)	$ (36,069)
Taxes Other than Income	$ 57,416	$ 65,893	$ 74,279	$ 79,294
Amortization of CIAC	$ (37,633)	$ (30,502)	$ (30,502)	$ (30,502)
Income Taxes				
Federal Income Tax	$ 7,419	$ 399	$ (22,794)	$ 118,401
State Income Tax	$ 665	$ 211	$ (12,047)	$ 62,577
Total Operating Expenses	$ 2,022,841	$ 1,852,165	$ 1,895,868	$ 2,116,703
Net Operating Income	$ (26,051)	$ 216,646	$ 154,701	$ 685,866
Non-Operating Income & Expenses				
Interest Expense	$ 151,839	$ 215,143	$ 240,451	$ 240,451
Other Income	619	-	-	-
Total Non-Operating Expenses	$ 152,458	$ 215,143	$ 240,451	$ 240,451
Net Income (Loss)	$ (178,509)	$ 1,502	$ (85,751)	$ 445,414

Community Utilities of Pennsylvania Inc.
Water Division
Statement Detailing Major Changes in the Operating or Financial Condition Occurring between December 31, 2020 and December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(6)

There were no major accounting changes between December 31, 2020 and December 31, 2022 which would effect the operating or financial condition of Community Utilties of Pennsylvania Inc.

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Community Utilities of Pennsylvania Inc.
Water Operations
Base Year / Present Revenues
TTM Period 12/31/2020

WATER

Line	A	B	C	D	E	F	G	H	I	J	K	L
		Class	Meter Size	Meter Class	Gallonage	Usage Charge	Vol Revenue	Units	BFC	Base Revenue	Out of Period Billing Adjustments	Revenues
1												
2	Consolidated:	RES	5/8"	5/8" Res.	128,865,636	$ 9.28	$ 1,196,307	31,515 [1]	$ 17.25	$ 543,631	(2,575)	$ 1,737,364
3	Consolidated:	RES	1"	1" Res.	22,667	$ 9.28	$ 210	12 [1]	$ 43.13	$ 518		$ 728
4	Consolidated:	RES	1.5"	1.5" Res.	58,166	$ 9.28	$ 540	12	$ 86.25	$ 1,035		$ 1,575
5	Consolidated:	RES	2"	2" Res.	172,601	$ 9.28	$ 1,602	12	$ 138.00	$ 1,610		$ 3,212
6	Consolidated:	COML	5/8"	5/8" Coml.	846,325	$ 9.28	$ 7,857	288	$ 17.25	$ 4,961		$ 12,818
7	Consolidated:	COML	1"	1" Coml.	120,746	$ 9.28	$ 1,121	48	$ 43.13	$ 2,060		$ 3,181
8	Consolidated:	COML	1.5"	1.5" Coml.	-	$ 9.28	$ -	-	$ 86.25	$ -		$ -
9	Consolidated:	COML	2"	2" Coml.	881,873	$ 9.28	$ 8,187	24	$ 138.00	$ 3,266		$ 11,453
10	Tamiment:	RES	5/8"	5/8" Res.	22,201,133	$ 5.13	$ 113,892	2,628 [1]	$ 54.55	$ 143,366		$ 257,258
11	Tamiment:	RES	1"	1" Res.	-	$ 5.13	$ -	- [1]	$ 54.55	$ -		$ -
12	Tamiment:	RES	1.5"	1.5" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
13	Tamiment:	RES	6"	6" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
14	Tamiment:	COML	5/8"	5/8" Coml.	220,500	$ 5.13	$ 1,131	36	$ 121.25	$ 4,365		$ 5,496
15	Tamiment:	COML	1"	1" Coml.	-	$ 5.13	$ -	-	$ 121.25	$ -		$ -
16	Tamiment:	COML	1.5"	1.5" Coml.	-	$ 5.13	$ -	-	$ 121.25	$ -		$ -
17	Tamiment:	COML	6"	6" Coml.	-	$ 5.13	$ -	24	$ 121.25	$ 2,910		$ 2,910
18												
19												
20					153,389,648		$ 1,330,847	34,598		$ 707,722	$ (2,575)	$ 2,035,995
21												
22	Consolidated:	AVB	Availability					547	$ 18.81	$ 10,282		$ 10,282
23	Consolidated:	COML	Unmetered - Public Fire Protection (Hydrants)					772	$ 32.18	$ 24,831		$ 24,831
24	Tamiment:	AVB	Availability					1,312	$ 19.14	$ 25,112		$ 25,112
25												
26		Water Total			153,389,648		$ 1,330,847	35,916		$ 767,947	$ (2,575)	$ 2,096,219
27												

WATER

Line	A	B	C	D	E	F	G	H	I	J	K	L
		Class	Meter Size	Meter Class	Gallonage	Usage Charge	Vol Revenue	Units	BFC	Base Revenue	Out of Period Billing Adjustments	Revenues
1												
2	Consolidated:	RES	5/8"	5/8" Res.	127,074,404	$ 9.28	$ 1,179,679	31,515 [1]	$ 17.25	$ 543,631	(2,575)	$ 1,720,735
3	Consolidated:	RES	1"	1" Res.	22,352	$ 9.28	$ 208	12 [1]	$ 43.13	$ 518		$ 725
4	Consolidated:	RES	1.5"	1.5" Res.	57,358	$ 9.28	$ 532	12	$ 86.25	$ 1,035		$ 1,567
5	Consolidated:	RES	2"	2" Res.	170,202	$ 9.28	$ 1,580	12	$ 138.00	$ 1,610		$ 3,190
6	Consolidated:	COML	5/8"	5/8" Coml.	834,561	$ 9.28	$ 7,748	288	$ 17.25	$ 4,961		$ 12,709
7	Consolidated:	COML	1"	1" Coml.	119,068	$ 9.28	$ 1,105	48	$ 43.13	$ 2,060		$ 3,166
8	Consolidated:	COML	1.5"	1.5" Coml.	-	$ 9.28	$ -	-	$ 86.25	$ -		$ -
9	Consolidated:	COML	2"	2" Coml.	869,615	$ 9.28	$ 8,073	24	$ 138.00	$ 3,266		$ 11,339
10	Tamiment:	RES	5/8"	5/8" Res.	21,892,537	$ 5.13	$ 112,309	2,628	$ 54.55	$ 143,366		$ 255,675
11	Tamiment:	RES	1"	1" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
12	Tamiment:	RES	1.5"	1.5" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
13	Tamiment:	RES	6"	6" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
14	Tamiment:	COML	5/8"	5/8" Coml.	217,435	$ 5.13	$ 1,115	36	$ 121.25	$ 4,365		$ 5,480
15	Tamiment:	COML	1"	1" Coml.	-	$ 5.13	$ -	-	$ 121.25	$ -		$ -
16	Tamiment:	COML	1.5"	1.5" Coml.	-	$ 5.13	$ -	-	$ 121.25	$ -		$ -
17	Tamiment:	COML	6"	6" Coml.	-	$ 5.13	$ -	24	$ 121.25	$ 2,910		$ 2,910
18												
19												
20					151,257,532		$ 1,312,349	34,598		$ 707,722	$ (2,575)	$ 2,017,496
21												
22	Consolidated:	RES	Availability					547	$ 18.81	$ 10,282		$ 10,282
23	Consolidated:	COML	Unmetered - Public Fire Protection (Hydrants)					744	$ 28.13	$ 20,929		$ 20,929
24	Tamiment:	RES	Availability					1,312	$ 19.14	$ 25,112		$ 25,112
25												
26		Water Total			151,257,532		$ 1,312,349	35,888		$ 764,045		$ 2,073,818
27												

Community Utilities of Pennsylvania Inc.
Water Operations
Proforma Future Test Year
Future Test Year Ended December 31, 2022

WATER

Line	A	B	C	D	E	F	G	H	I	J	K	L
		Class	Meter Size	Meter Class	Gallonage	Usage Charge	Vol Revenue	Units	BFC	Base Revenue	Out of Period Billing Adjustments	Revenues
1												
2	Consolidated:	RES	5/8"	5/8" Res.	125,308,070	$ 9.28	$ 1,163,281	31,515 [1]	$ 17.25	$ 543,631	(2,575)	$ 1,704,337
3	Consolidated:	RES	1"	1" Res.	22,042	$ 9.28	$ 205	12 [1]	$ 43.13	$ 518		$ 722
4	Consolidated:	RES	1.5"	1.5" Res.	56,561	$ 9.28	$ 525	12	$ 86.25	$ 1,035		$ 1,560
5	Consolidated:	RES	2"	2" Res.	167,836	$ 9.28	$ 1,558	12	$ 138.00	$ 1,610		$ 3,168
6	Consolidated:	COML	5/8"	5/8" Coml.	822,961	$ 9.28	$ 7,640	288	$ 17.25	$ 4,961		$ 12,601
7	Consolidated:	COML	1"	1" Coml.	117,413	$ 9.28	$ 1,090	48	$ 43.13	$ 2,060		$ 3,150
8	Consolidated:	COML	1.5"	1.5" Coml.	-	$ 9.28	$ -	-	$ 86.25	$ -		$ -
9	Consolidated:	COML	2"	2" Coml.	857,527	$ 9.28	$ 7,961	24	$ 138.00	$ 3,266		$ 11,227
10	Tamiment:	RES	5/8"	5/8" Res.	21,588,231	$ 5.13	$ 110,748	2,628	$ 54.55	$ 143,366		$ 254,114
11	Tamiment:	RES	1"	1" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
12	Tamiment:	RES	1.5"	1.5" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
13	Tamiment:	RES	6"	6" Res.	-	$ 5.13	$ -	-	$ 54.55	$ -		$ -
14	Tamiment:	COML	5/8"	5/8" Coml.	214,413	$ 5.13	$ 1,100	36	$ 121.25	$ 4,365		$ 5,465
15	Tamiment:	COML	1"	1" Coml.	-	$ 5.13	$ -	-	$ 121.25	$ -		$ -
16	Tamiment:	COML	1.5"	1.5" Coml.	-	$ 5.13	$ -	-	$ 121.25	$ -		$ -
17	Tamiment:	COML	6"	6" Coml.	-	$ 5.13	$ -	24	$ 121.25	$ 2,910		$ 2,910
18												
19												
20					149,155,052		$ 1,294,107	34,598		$ 707,722	$ (2,575)	$ 1,999,254
21												
22	Consolidated:	RES	Availability					547	$ 18.81	$ 10,282		$ 10,282
23	Consolidated:	COML	Unmetered - Public Fire Protection (Hydrants)					744	$ 28.13	$ 20,929		$ 20,929
24	Tamiment:	RES	Availability					1,312	$ 19.14	$ 25,112		$ 25,112
25												
26		Water Total			149,155,052		$ 1,294,107	35,888		$ 738,933		$ 2,055,577
27												

	A	B	C	D	E	F	G	H	I	J
	Proforma Revenue at Proposed Rates									
	Water Residential									
Line No.	**Meter Size**	**# of bills (1 per month)**	**Proposed Base Charge**	**Base Charge Revenue**	**Low-Income Gallonage**	**Proposed Low-Income Gallonage Charge (per Kgal)**	**Regular Residential Gallonage**	**Proposed Regular Residential Gallonage Charge (per Kgal)**	**Gallonage Charge Revenue**	**Total Revenue**
1	**Regular Residential**									
2	5/8"	39,399	$ 24.84	$ 978,608	17,627,556	$ 4.13	129,268,744	$ 11.93	$ 1,614,344	$ 2,592,951
3	3/4"	-	$ 33.49	$ -	-	$ 4.13	-	$ 11.93	$ -	$ -
4	1"	12	$ 50.81	$ 610	2,645	$ 4.13	19,397	$ 11.93	$ 242	$ 852
5	1 1/2"	12	$ 94.08	$ 1,129	6,787	$ 4.13	49,773	$ 11.93	$ 622	$ 1,751
6	2"	12	$ 146.02	$ 1,704	20,140	$ 4.13	147,696	$ 11.93	$ 1,844	$ 3,548
7	3"	-	$ 267.20	$ -	-	$ 4.13	-	$ 11.93	$ -	$ -
8	4"	-	$ 440.31	$ -	-	$ 4.13	-	$ 11.93	$ -	$ -
9	6"	-	$ 873.09	$ -	-	$ 4.13	-	$ 11.93	$ -	$ -
10	8"	-	$ 1,392.44	$ -	-	$ 4.13	-	$ 11.93	$ -	$ -
11	10"	-	$ 1,998.33	$ -	-	$ 4.13	-	$ 11.93	$ -	$ -
12	12"	-	$ 3,729.47	$ -	-	$ 4.13	-	$ 11.93	$ -	$ -
13										
14	**Total Residential Water**	**39,435**		**$ 982,050**	**17,657,129**		**129,485,610**		**$ 1,617,052**	**$ 2,599,102**
15										
16	**Water Commercial**									
17	**Meter Size**	**# of bills (1 per month)**	**Proposed Base Charges**	**Base Charge Revenue**			**Gallonage**	**Proposed Gallonage Charge (per Kgal)**	**Gallonage Charge Revenue**	**Total Revenue**
18	5/8"	324	$ 24.84	$ 8,038			1,037,374	$ 10.99	$ 11,400	$ 19,438
19	3/4"	-	$ 33.49	$ -			-	$ 10.99	$ -	$ -
20	1"	48	$ 50.81	$ 2,427			117,413	$ 10.99	$ 1,290	$ 3,717
21	1 1/2"	-	$ 94.08	$ -			-	$ 10.99	$ -	$ -
22	2"	24	$ 146.02	$ 3,456			857,527	$ 10.99	$ 9,424	$ 12,880
23	3"	-	$ 267.20	$ -			-	$ 10.99	$ -	$ -
24	4"	-	$ 440.31	$ -			-	$ 10.99	$ -	$ -
25	6"	24	$ 873.09	$ 20,954			-	$ 10.99	$ -	$ 20,954
26	8"	-	$ 1,392.44	$ -			-	$ 10.99	$ -	$ -
27	10"	-	$ 1,998.33	$ -			-	$ 10.99	$ -	$ -
28	12"	-	$ 3,729.47	$ -			-	$ 10.99	$ -	$ -
29										
30	**Total Commercial Water**	**419**		**$ 34,874**	**-**		**2,012,313**		**$ 22,115**	**$ 56,989**
31										
32	Availability	4,483	$ 15.32	$ 68,660						$ 68,660
33	Hydrant (Hydrants*Bills)	744	$ 118.73	$ 88,336						$ 88,336
34	**Total Water**									**$ 2,813,087**

Community Utilities of Pennsylvania Inc. **Section 2**

Water Operations **Supporting Schedule No. 3**

Uncollectible Accounts **Page 1 of 1**

Future Test Year Ended December 31, 2022

	A	B
Line		Water
1	**FORECAST Revenues**	$ 2,055,577
2		
3	Uncollectible %	-0.73%
4		
5		
6	Uncollectible Accounts	$ (14,955)
7		
8		
9	**PROPOSED Revenues**	$ 2,813,087
10		
11	Uncollectible %	-0.73%
12		
13		
14	Uncollectible Accounts	$ (20,466)

Community Utilities of Pennsylvania Inc.
Water Division
Depreciation Expense
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Section 2
Supporting Schedule No. 4
Page 1 of 1

Line	A	Source	B	Water
1.	**December 31, 2020**			
2.	Utility Plant	[1]	$	237,249
3.	Transportation	[1]		14,358
4.	Computers	[1]		2,098
5.				
6.	CIAC	[1]		(37,633)
7.				
8.	PAA	[1]		(43,334)
9.				
10.	**Per Books December 31, 2020**		$	172,739
11.				
12.				
13.	**December 31, 2021**			
14.	Utility Plant	[2]	$	277,742
15.	Transportation	[3]		20,052
16.	Computers	[4]		38,793
17.				
18.	CIAC	[2]		(30,502)
19.				
20.	PAA	[5]		(36,069)
21.				
22.	**Future Period December 31, 2021**		$	270,017
23.				
24.				
25.	**December 31, 2022**			
26.	Utility Plant	[2]	$	303,716
27.	Transportation	[3]		18,061
28.	Computers	[4]		53,765
29.				
30.	CIAC	[2]		(30,502)
31.				
32.	PAA	[5]		(36,069)
33.				
34.	**FPFTY December 31, 2022**		$	308,972
35.				
36.				
37.	Source:			
38.	[1] Trial Balance			
39.	[2] wp-r			
40.	[3] wp-p2			
41.	[4] wp-p3			
42.	[5] wp-v			

Community Utilities of Pennsylvania Inc.
Water Division
Calculation of Taxes Other Than Income Taxes
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line No.	A	B	
1.	**Test Year 12/31/2020**		Water
2.			
3.	Utility/Commission Tax	$	9,350
4.	Real Estate Tax		19,468
5.	Personal Property Tax		-
6.	Gross Receipts Tax		-
7.	Sales/Use Tax		-
8.			
9.	Payroll Taxes		28,597
10.			
11.	Total	$	57,416
12.			
13.	**Forecast 12/31/2021**		
14.			
15.	Utility/Commission Tax	$	13,324
16.	Real Estate Tax		21,312
17.	Personal Property Tax		-
18.	Gross Receipts Tax		-
19.	Sales/Use Tax		-
20.			
21.	Payroll Taxes		31,257
22.			
23.	Total	$	65,893
24.			
25.	**Forecast 12/31/2022**		
26.			
27.	Utility/Commission Tax	$	18,624
28.	Real Estate Tax		23,167
29.	Personal Property Tax		-
30.	Gross Receipts Tax		-
31.	Sales/Use Tax		-
32.			
33.	Payroll Taxes		32,487
34.			
35.	Total	$	74,279
36.			
37.	**Pro Forma Proposed**		
38.			
39.	Proposed Revenue Increase	$	757,511
40.			
41.	Gross Receipts Increase		0.66%
42.	(Utility/Commission Tax)		
43.			
44.	**Adjustment**	**$**	**5,015**

Community Utilities of Pennsylvania Inc.
Water Operations
Calculation of Income Taxes
Future Test Year Ended December 31, 2022

	A	B	C	D	E
Line No.	**WATER**	12/31/2021 Forecast	12/31/2022 Forecast	12/31/2022 Future Test Year	Pro Forma Proposed
1	State Income Taxes				
2					
3	Total Revenue	$ 2,068,810	$ 2,050,568	$ 2,050,568	$ 2,802,568
4					
5	Maintenance Expense	876,551	880,985	880,985	880,985
6	General Expense	639,093	666,474	666,474	666,474
7	Depreciation & Amortization	270,017	308,972	308,972	308,972
8	Taxes Other Than Income	65,893	74,279	74,279	79,294
9	Other Income	-	-	-	-
10	Interest Expense	215,143	240,451	240,451	240,451
11					
12	Taxable Income profit/(loss)	$ 2,113	$ (120,592)	$ (120,592)	$ 626,392
13	State Tax Rate	9.99%	9.99%	9.99%	9.99%
14					
15	Total State Income Taxes	$ 211	$ (12,047)	$ (12,047)	$ 62,577
16					
17	Federal Taxes				
18					
19	Taxable Income before taxes	$ 2,113	$ (120,592)	$ (120,592)	$ 626,392
20					
21	Less: State I/T	211	(12,047)	(12,047)	62,577
22					
23	Federal Taxable Income	$ 1,902	$ (108,545)	$ (108,545)	$ 563,816
24	Federal Tax Rate	21%	21%	21%	21%
25					
26	Total Federal Taxes	$ 399	$ (22,794)	$ (22,794)	$ 118,401

Community Utilities of Pennsylvania Inc.
Water Division
Salary Expense
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line	A	B	
			Water
1.	**December 31, 2020**		
2.	LEADERSHIP OPS	$	44,141
3.	**General Salaries**	$	44,141
4.			
5.	OPERATIONS FIELD		350,699
6.	CAPITALIZED TIME ADJUSTMENT		(13,360)
7.	**Maintenance Salaries**	$	337,340
8.			
9.	**Per Books December 31, 2020**	$	381,480
10.			
11.			
12.	**December 31, 2021**		
13.	LEADERSHIP OPS	$	143,059
14.	COMPANY ADJUSTMENT		(9,783)
15.	**General Salaries**	$	133,276
16.			
17.	OPERATIONS FIELD		283,127
18.	CAPITALIZED TIME ADJUSTMENT		(39,498)
19.	**Maintenance Salaries**	$	243,629
20.			
21.	**Future Period December 31, 2021**	$	376,904
22.			
23.			
24.	**December 31, 2022**		
25.	LEADERSHIP OPS	$	148,365
26.	COMPANY ADJUSTMENT		(10,004)
27.	**General Salaries**	$	138,361
28.			
29.	OPERATIONS FIELD		297,127
30.	CAPITALIZED TIME ADJUSTMENT		(39,287)
31.	**Maintenance Salaries**	$	257,839
32.			
33.	**FPFTY December 31, 2022**	$	396,201

Community Utilities of Pennsylvania Inc.
Water Division
Rate Case Expense
Future Test Year Ended December 31, 2022

	A	B	C	D	E	F
Line No.	**Description**				**Total**	
1	Legal Fees				$ 140,000	
2						
3	Customer Notices (2):					
4	Postage	7,188	=	customers x $0.49	$ 7,044	
5	Stock	7,188	=	notices x (.085)	$ 1,222	
6						
7	Travel/Publications/Misc				$ 7,200	
8						
9	External Consultants - Ready to File - (ROE - ScottMadden, Inc. & COSS - Baker Tilly)				$ 38,000	
10	External Consultants - Post Filing - (ROE - ScottMadden, Inc. & COSS - Baker Tilly)				$ 64,930	
11						Allocated W
12	Cost of Current Case				$ 258,396	$ 118,312
13						
14	Unamortized Rate Case Expense as of 1/1/2022				$ 62,299	$ 28,525
15						
16	Total Rate Case Expense				$ 320,695	$ 146,837
17						
18	Amortized Over 4 Years				4	4
19						
20						**Water**
21	**Total Annual Regulatory Expense**				**$ 80,174**	**$ 36,709**

Community Utilities of Pennsylvania Inc.
Water Division
Net Plant In Service
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line	A		B
1.	**December 31, 2020**	Source	**Water**
2.	Utility Plant In Service (UPIS)	[1]	$ 12,873,638
3.	Transportation	[1]	215,649
4.	Computers	[1]	490,277
5.	**Total Gross Plant In Service**		$ 13,579,564
6.			
7.	Accumulated Depreciation UPIS	[1]	$ (3,681,982)
8.	Accumulated Depreciation Transportation	[1]	(157,478)
9.	Accumulated Depreciation Computers	[1]	(397,260)
10.	**Total Accumulated Depreciation**		$ (4,236,721)
11.			
12.	**Per Books December 31, 2020**		$ 9,342,844
13.			
14.			
15.	**Additions**		
16.	Utility Plant In Service (UPIS)	[2]	$ 1,161,497
17.	Transportation	[3]	16,026
18.	Computers	[4]	182,657
19.	**Total Additions**		$ 1,360,180
20.			
21.	**Retirements**		
22.	Utility Plant In Service (UPIS)	[2]	$ (73,880)
23.	Transportation	[3]	0
24.	Computers	[4]	0
25.	**Total Retirements**		$ (73,880)
26.			
27.	**Depreciation**		
28.	Utility Plant In Service (UPIS)	[2]	$ 277,742
29.	Transportation	[3]	20,052
30.	Computers	[4]	38,793
31.	**Total Depreciation**		$ 336,588
32.			
33.	**December 31, 2021**		
34.	Utility Plant In Service (UPIS)		$ 13,961,256
35.	Transportation		231,674
36.	Computers		672,934
37.	**Total Gross Plant In Service**		$ 14,865,864
38.			
39.	Accumulated Depreciation UPIS		$ (3,885,845)
40.	Accumulated Depreciation Transportation		(177,531)
41.	Accumulated Depreciation Computers		(436,054)
42.	**Total Accumulated Depreciation**		$ (4,499,429)
43.			
44.	**Future Period December 31, 2021**		$ 10,366,435
45.			
46.			
47.	**Additions**		
48.	Utility Plant In Service (UPIS)	[2]	$ 1,346,448
49.	Transportation	[3]	0
50.	Computers	[4]	24,364
51.	**Total Additions**		$ 1,370,812
52.			
53.	**Retirements**		
54.	Utility Plant In Service (UPIS)	[2]	$ (77,054)
55.	Transportation	[3]	0
56.	Computers	[4]	0
57.	**Total Retirements**		$ (77,054)
58.			
59.	**Depreciation**		
60.	Utility Plant In Service (UPIS)	[2]	$ 303,716
61.	Transportation	[3]	18,061
62.	Computers	[4]	53,765
63.	**Total Depreciation**		$ 375,543
64.			
65.	**December 31, 2022**		
66.	Utility Plant In Service (UPIS)		$ 15,230,650
67.	Transportation		231,674
68.	Computers		697,298
69.	**Total Gross Plant In Service**		$ 16,159,622
70.			
71.	Accumulated Depreciation UPIS		$ (4,112,507)
72.	Accumulated Depreciation Transportation		(195,592)
73.	Accumulated Depreciation Computers		(489,819)
74.	**Total Accumulated Depreciation**		$ (4,797,918)
75.			
76.	**FPFTY December 31, 2022**		$ 11,361,704
77.			
78.			
79.	Source:		
80.	[1] Trial Balance		
81.	[2] wp-p1		
82.	[3] wp-p2		
83.	[4] wp-p3		

Community Utilities of Pennsylvania Inc.
Water Operations
Utility Plant Additions and Retirements
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line No.	A		B
			Community Utilities of Pennsylvania Water
	December 31, 2020		
1.	**Utility Plant In Service**		
2.	Total Plant In Service Cost	$	13,579,564
3.	Total Accumulated Depreciation		(4,236,721)
4.	Net Book Value 12/31/2020	$	9,342,844
5.			
6.	**December 31, 2021**		
7.	**Utility Plant In Service**		
8.	Total Plant In Service Cost 12/31/2020	$	13,579,564
9.	Pro Forma Additions		1,360,180
10.	Pro Forma Retirements		(73,880)
11.	Total Plant In Service Cost 12/31/2021	$	14,865,864
12.			
13.	Total Accumulate Depreciation 12/31/2020	$	(4,236,721)
15.	Depreciation Expense		(336,588)
16.	Total Accumulated Depreciation 12/31/2021	$	(4,573,309)
17.			
18.	Net Book Value 12/31/2021	$	10,292,556
19.			
20.			
21.	Change in Gross Plant	$	1,286,300
22.	Change in Accumulated Depreciation		(336,588)
23.	Depreciation Expense	$	336,588
24.			
25.	**December 31, 2022**		
26.	**Utility Plant In Service**		
27.	Total Plant In Service Cost 12/31/2021	$	14,865,864
28.	Pro Forma Additions		1,370,812
29.	Pro Forma Retirements		(77,054)
30.	Total Plant In Service Cost 12/31/2022	$	16,159,622
31.			
32.	Total Accumulate Depreciation 12/31/2021	$	(4,573,309)
34.	Depreciation Expense		(375,543)
35.	Total Accumulated Depreciation 12/31/2022	$	(4,948,852)
36.			
37.	Net Book Value 12/31/2022	$	11,210,770
38.			
39.			
40.	Change in Gross Plant	$	1,293,758
41.	Change in Accumulated Depreciation	$	(375,543)
42.	Depreciation Expense	$	375,543

Community Utilities of Pennsylvania Inc.
Water Operations
Calculation of Working Capital
Future Test Year Ended December 31, 2022

Line No.	A	B	C Water
1	**12/31/20 Base Year**		
2	Maintenance Expenses		$ 1,181,825
3	General Expenses		602,777
4	Taxes Other Than Income		57,416
5	Reduction of Real Estates Taxes		(19,468)
6			
7	Total		$ 1,822,550
8			
9	Working Capital	45/360	$ 227,819
10			
11			
12	**12/31/21 Forecast**		
13	Maintenance Expenses		$ 876,551
14	General Expenses		639,093
15	Taxes Other Than Income		65,893
16	Reduction of Real Estates Taxes		(21,312)
17			
18	Total		$ 1,560,225
19			
20	Working Capital	45/360	$ 195,028
21			
22			
23	**12/31/22 Forecast**		
24	Maintenance Expenses		$ 880,985
25	General Expenses		666,474
26	Taxes Other Than Income		79,294
27	Reduction of Real Estates Taxes		(23,167)
28			
29	Total		$ 1,603,586
30			
31	Working Capital	45/360	$ 200,448

	A	B	C	D
Line No.	**Description**	**December 31, 2020**	**Annual Interest Expense**	**Capital Structure**
1.	COMMON SHAREHOLDERS' EQUITY:			
2.	Common shares, $.10 par value; authorized and			
3.	issued 1,000 shares	$ 110		
4.	Paid-in capital	223,265,034		
5.	Retained earnings	88,700,896		
6.				
7.	Total Common Shareholder's Equity	$ 311,966,040		47.68%
8.				
9.	LONG-TERM DEBT:			
10.	Collateral trust notes -			
11.	6.58%, $9,000,000 due in annual installments	$ 143,340,372	$ 9,517,639	
12.	beginning in 2017 through 2035			
14.	Collateral trust notes -			
16.	4.37%, beginning in 2018 through 2033	$ 99,556,146	$ 4,435,787	
17.				
14.	Collateral trust notes -			
16.	3.15%, beginning in 2020 through 2030	$ 49,781,241	$ 1,598,231	
17.				
14.	Collateral trust notes -			
16.	3.35%, beginning in 2020 through 2035	$ 49,776,724	$ 1,690,487	
17.				
18.	Toronto Dominion Bank Line of Credit			
19.	3.26% Libor Rate as of 12/31/2019			
20.	beginning in 10/2015 through 10/2020	$ (160,888)	$ 58,505	
21.				
22.	Total Debt	$ 342,293,595	$ 17,300,649	52.32%
23.				
24.	TOTAL CAPITALIZATION	$ 654,259,635		100.00%
25.				
26.	COST OF DEBT	5.05%		
27.				
28.				
29.		Ratio	Cost	Weighted Cost
30.	Debt	52.32%	5.05%	2.64%
31.	Common Equity	47.68%	10.35%	4.94%
32.		100.00%		7.58%
33.				

Community Utilities of Pennsylvania Inc.
Water Operations
Pro Forma Interest Expense
Future Test Year Ended December 31, 2022

Line No.	A	B
		Water
1	Pro Forma Present Rate Base	8,136,079
2		
3	Debt Ratio	52.32%
4		
5	Embedded Cost of Debt	5.05%
6		
7		
8	Pro Forma Interest Expense	215,143
9		
10	Pro Forma Present Rate Base	9,093,154
11		
12	Debt Ratio	52.32%
13		
14	Embedded Cost of Debt	5.05%
15		
16		
17	Pro Forma Interest Expense	240,451

CUPA W Exhibit DMC-2

ERC Allocation Weights

WP-DC-01 (ERC Allocations)

Co	Territory	Water	Sewer	Total ERC Count	Water - Co	Sewer - Co	State	Mid-Atlantic	Leadership	WSC
315	Westgate	995	-	995			13.84%	5.23%	1.92%	0.33%
316	UIP	-	1,601	1,601			22.27%	8.41%	3.10%	0.54%
317	Penn Estates	1,740	1,739	3,479			48.40%	18.28%	6.73%	1.17%
319	Tamiment	556	557	1,113			15.49%	5.85%	2.15%	0.37%
CUPA	**State**	**3,291**	**3,897**	**7,188**	**45.79%**	**54.21%**	**100.00%**	**37.78%**	**13.90%**	**2.41%**
	MD			4,627				24.32%	8.95%	1.55%
	NJ			1,079				5.67%	2.09%	0.36%
	VA			6,133				32.23%	11.86%	2.06%
	Mid-Atlantic			**19,027**				**100.00%**	**36.81%**	**6.39%**
	IL			16,394					31.71%	5.50%
	IN			8,450					16.35%	2.84%
	KY			7,824					15.14%	2.63%
	Leadership			**51,694**					**100.00%**	**17.35%**
	SC			31,268						10.50%
	NV			24,704						8.29%
	AZ			10,094						3.39%
	FL			64,743						21.73%
	LA			31,879						10.70%
	GA			16,971						5.70%
	TN			312						0.10%
	NC			57,023						19.14%
	al			2,264						0.76%
	TX			6,966						2.34%
	WSC			**297,918**						**100.00%**

	(A) Source Tab - Electric Forecast	(A) Source Tab - Electric Forecast
	2021 Forecast	**2022 Forecast**
Purchased Power - Water	**103,864**	**106,110**
Purchased Power - Wastewater	**122,976**	**125,635**
CUPA Forecast	**$ 226,840**	**$ 231,745**

Description of calculations:
Purchased power forecast calculations for each service territory can be found on the tab labeled, "Electric Forecast"
Forecasted period is found in columns Z through AW. Purchased power costs are calculated using the
average year-over-year growth rate % calculated in column M of the "Electric Forecast" tab using historical purchased
power costs from September 2012 to May 2020 for each service territory. Historical costs are found in columns E through K of
"Electric Forecast" tab. Historical invoicing is shown on tab, "Electric PV" and allocated to the appropriate service period on tab, "Electric Service Period"
The seasonality weights are shown in Rows 4-7 on tab, "Summarized Service Period"

Notes/Source:
(A) Electric Forecast Tab

Community Utilites of Pennsylvania, Inc.
Purchased Water Expense Forecast

WP-DC-03 (Purchased Water Expense)
Purchased Water Expense Forecast

Water Territory	2021 Forecast	2022 Forecast
Westgate	221,125	217,663
Penn Estates	-	-
CUPA Forecast	**$ 221,125**	**$ 217,663**

Description of calculations:

Purchased water expense forecast can be found on tab, "315" row 40.

Rates used to calculate the expense are found on row 39, this is multiplied by the forecasted pumped water, found in

	A	B	C	D	E	F
	December 31, 2021					
Line No.	**Account Description**	**Historical 3-Year Average**	**Expense Adjustment**	**Allocation**	**Water**	**Wastewater**
1	62290 - Deferred Maintenance Expense	64,908		Combined	24,683	40,224
2	62206 - Water Main Supplies	11,105		Water	11,105	-
3	62207 - Water Main Repairs	14,935		Water	14,935	-
4	62208 - Water Main Main Breaks	13,229		Water	13,229	-
5	62209 - Water Main Electric Equip Repair	7,503		Water	7,503	-
6	62210 - Water Main Permits	10,358		Water	10,358	-
7	62211 - Water Main Other Maint Exp	33,425		Water	33,425	-
8	62216 - Sewer Main Supplies	4,982		Wastewater	-	4,982
9	62217 - Sewer Main Repairs	13,317		Wastewater	-	13,317
10	62218 - Sewer Main Main Breaks	4,035		Wastewater	-	4,035
11	62219 - Sewer Main Electric Equip Repair	784		Wastewater	-	784
12	62220 - Sewer Main Permits	6,225		Wastewater	-	6,225
13	62221 - Sewer Main Other Maint Exp	32,300		Wastewater	-	32,300
14	62225 - Other Plant Maintenance	1,647		Combined	754	893
15	62226 - Communication Expense	3,428		Combined	1,570	1,859
16	62227 - Equipment Rental	-		Combined	-	-
17	62228 - Oper Contracted Workers	12,700	10,160	Combined	1,163	1,377
18	62229 - Outside Lab Fees	-		Combined	-	-
19	62230 - Uniforms	5,990		Combined	2,743	3,247
20	62231 - Weather/Hurricane/Fuel	4,296		Combined	1,967	2,329
21	62325 - Sludge Hauling Adjustment (Historical Avg vs Forecasted)			Sewer		32,445
22						
23	Total December 31, 2021 Maintenance Expense				123,435	144,017
24					.	
25	**December 31, 2022**					
	Account Description	**Historical 3-Year Average**	**Expense Adjustment**	**Allocation**	**Water**	**Wastewater**
26	62290 - Deferred Maintenance Expense	64,908	13,695	Actuals	18,192	32,800
27	62206 - Water Main Supplies	11,105	-	Water	11,105	-
28	62207 - Water Main Repairs	14,935	-	Water	14,935	-
29	62208 - Water Main Main Breaks	13,229	-	Water	13,229	-
30	62209 - Water Main Electric Equip Repair	7,503	-	Water	7,503	-
31	62210 - Water Main Permits	10,358	-	Water	10,358	-
32	62211 - Water Main Other Maint Exp	33,425	-	Water	33,425	-
33	62216 - Sewer Main Supplies	4,982	-	Wastewater	-	4,982
34	62217 - Sewer Main Repairs	13,317	-	Wastewater	-	13,317
35	62218 - Sewer Main Main Breaks	4,035	-	Wastewater	-	4,035
36	62219 - Sewer Main Electric Equip Repair	784	-	Wastewater	-	784
37	62220 - Sewer Main Permits	6,225	-	Wastewater	-	6,225
38	62221 - Sewer Main Other Maint Exp	32,300	-	Wastewater	-	32,300
39	62225 - Other Plant Maintenance	1,647	-	Combined	754	893
40	62226 - Communication Expense	3,428	-	Combined	1,570	1,859
41	62227 - Equipment Rental	-	-	Combined	-	-
42	62228 - Oper Contracted Workers	12,700	10,160	Combined	1,163	1,377
43	62229 - Outside Lab Fees	-	-	Combined	-	-
44	62230 - Uniforms	5,990	-	Combined	2,743	3,247
45	62231 - Weather/Hurricane/Fuel	4,296	-	Combined	1,967	2,329
46	62325 - Sludge Hauling Adjustment (Historical Avg vs Forecasted)			Sewer		30,409
47						
48	Total December 31, 2022 Maintenance Expense				116,943	134,556

	Source Tab - PA Chemical Load	Water ERC Allocation Weight	Total Water	Wastewater ERC Allocation Weight	Total Wastewater
CUPA 2021 Forecast - Chlorine	**$ 16,448**	**100.00%**	**16,448**	**0.00%**	**-**
CUPA 2021 Forecast - Odor Control	**$ 13,820**	**0.00%**	**-**	**100.00%**	**13,820**
CUPA 2021 Forecast - Other	**$ 192,316**	**45.79%**	**88,056**	**54.21%**	**104,260**
TOTAL 2021 Forecast			**$ 104,504**		**$ 118,080**
CUPA 2022 Forecast - Chlorine	**$ 16,448**	**100.00%**	**16,448**	**0.00%**	**-**
CUPA 2022 Forecast - Odor Control	**$ 13,820**	**0.00%**	**-**	**100.00%**	**13,820**
CUPA 2022 Forecast - Other	**$ 212,839**	**45.79%**	**97,453**	**54.21%**	**115,386**
TOTAL 2022 Forecast		**45.79%**	**113,902**	**54.21%**	**129,206**

Description of calculations:

Chemical expense forecast calculations for each service territory can be found on individual service territory tabs labeled "317100", "317101", "316100","319100", "319101" in columns CE through DB. Transportation costs and chemical costs by type are listed in columns G & H in the individual service territory tabs Chemical forecast amounts are calculated using the actual number of chemical units expected to be purchased (which are found in columns P through AM on the service territory tabs) multiplied by the effective cost per unit (column G plus column H) for each chemical type used by each service territory.

	Fuel	Auto Repairs	Other Transportation	Rounding	Annual Total	Water Allocated	Wastewater Allocated
CUPA Forecast 2021	**$ 22,903**	**$ 21,679**	**$ 4,961**	**$ 3**	**$ 49,546**	**$ 22,686**	**$ 26,860**
CUPA Forecast 2022	**$ 24,273**	**$ 22,066**	**$ 2,975**	**$ 2**	**$ 49,316**	**$ 22,580**	**$ 26,736**

Notes
Fuel is forecasted at the forecasted cost per gallon multiplied by forecasted usage
Auto repairs are forecasted based on historical averages
Other transportation expenses include license renewals and miscellaneous transportation costs.

	(A) Source Tab - 315, 316, 317 & 319	(B) Total	(C) Water ERC Allocation Weight	(D) Total Water	(E) Wastewater ERC Allocation Weight	(F) Total Wastewater
CUPA Forecast 2021	**$ 21,221**	**$ 21,221**	**45.79%**	**9,716**	**54.21%**	**11,504**
CUPA Forecast 2022	**$ 21,738**	**$ 21,738**	**45.79%**	**9,953**	**54.21%**	**11,785**

Notes/Source:
(A) 315, 316, 317, 319 & 858 Tabs
(B) Total Expense
(C) = WP-DC-01 (ERC Allocations) - Water Co.
(D) = (C) * (B)
(E) = WP-DC-01 (ERC Allocations) - Wastewater Co.
(F) = (B) * (K)

	(A) Source Tab - 858 & 317	(B) Source Tab - 700	(C) Rounding	(D) Total	(E) Water ERC Allocation Weight	(F) Total Water	(G) Wastewater ERC Allocation Weight	(H) Total Wastewater
CUPA Forecast 2021	$ 6,539	$ 1,668		8,207	45.79%	3,758	54.21%	4,449
CUPA Forecast 2022	$ 6,670	$ 1,668	$ (6)	$ 8,332	45.79%	3,815	54.21%	4,517

Notes/Source:
(A) 858 & 317 Tab
(B) 700 Tab
(C) Rounding
(D) (A) + (B) + (C)
(E) = WP-DC-01 (ERC Allocations) - Water Co.
(F) = (D) * (E)
(G) = WP-DC-01 (ERC Allocations) - Wastewater Co.
(H) = (D) * (G)

Community Utilities of Pennsylvania, Inc.
Office Supplies, Utilities, and Other Office Expense Forecast Summary

WP-DC-09 (Office Supplies, Utilities, and Other Office Expense)
Office Supplies, Utilities, and Other Office Expense Forecast Summary

	(A) Source Tab - Office Expense	(B) Source Tab - Office Utility	(C) Source Tab - Billing & Customer Service	(D) Source Tab - Information Technology	(E) Water Total	(F) Wastewater Total
CUPA Forecast 2021	**17,759**	**56,740**	**21,405**	**6,283**	**46,789**	**55,399**
CUPA Forecast 2022	**$ 17,721**	**$ 52,848**	**$ 21,856**	**$ 6,283**	**$ 45,196**	**$ 53,513**

Notes/Source:
(A) Office Expense Tab
(B) Office Utility Tab
(C) Billing and Customer Service Tab
(D) Information Technology Tab
(E) Total Water Expense
(F) Total Wastewater Expense

	(A) State Cost Center Tab	(B) 315,316,317,319 Tab	(C) Regional - 700- President Tab	(D) Regional - 803- VP Tab	(E) Total	(F) Water ERC Allocation Weight	(G) Total Water	(H) Wastewater ERC Allocation Weight	(I) Total Wastewater
CUPA Forecast 2021	87,700	6,366	1,548	3,069	98,682	45.79%	45,184	54.21%	53,498
CUPA Forecast 2022	99,407	6,614	1,608	3,176	110,804	45.79%	50,734	54.21%	60,070

Description of calculations:
Insurance costs are forecasted at CRU-US and are based on review and analysis of current and projected insurance policies.
Additional detail of insurance policy information can be found on the "Insurance Policies" tab.

Community Utilities of Pennsylvania, Inc.
Miscellaneous Expense Forecast

WP-DC-11 (Testing, Meter Reading, and Miscellaneous Expense
Miscellaneous Expense Forecast

NARUC	Account Description	Total Forecast 2021 Combined Operatior	Total Forecast 2022 Combined Operations	2021 Forecast Water	2021 Forecast Wastewater	2022 Forecast Water	2022 Forecast Wastewater
636	METER READING	7,104	12,104	7,104	-	12,104	-
675	LICENSE FEES	977	1,176	447	530	538	638
675	MEMBERSHIPS	3,055	3,146	1,399	1,656	1,440	1,706
604	TRAINING EXPENSE	14,409	11,035	6,598	7,812	5,052	5,982
675	OTHER MISC EXPENSE	127	2,111	58	69	966	1,144
660	TRAVEL LODGING	1,150	5,018	526	623	2,298	2,720
675	TRAVEL AIRFARE	1,668	1,668	764	904	764	904
675	TRAVEL TRANSPORTATION	1,687	1,251	773	915	573	678
660	TRAVEL MEALS	368	383	168	199	175	208
675	TRAVEL ENTERTAINMENT	(2,122)	-	(972)	(1,151)	-	-
675	TRAVEL OTHER	1,503	1,551	688	815	710	841
635	TEST-WATER	11,218	9,685	11,218	-	9,685	
635	TEST-EQUIP/CHEMICAL	12,558	12,847	5,750	6,808	5,882	6,965
635	TEST-SAFE WATER DRINKIN	6,300	3,150	6,300	-	3,150	-
635	TEST-SEWER	40,138	43,519	-	40,138	-	43,519
	ROUNDING	13	3	6	7	4	(2)
	TOTAL	**100,152**	**108,646**	**40,827**	**59,325**	**43,343**	**65,303**

Notes/Source:
"315" Tab - Westgate Operations
"316" Tab - UIP Operations
"317" Tab - Penn Estates Operations
"319" Tab - Tamiment Operations
"858" Tab - State of PA Cost Center
"700" Tab - President/Regional Cost Center - Allocated at 13.90% to CUPA

Community Utilities of Pennsylvania, Inc.
Utility Commission Tax Expense Forecast

WP-DC-12 (Utility Commission Tax Expense)
Utility Commission Tax Expense Forecast

Territory	(A) Water Revenue Source Tab - CUPA	(B) Wastewater Revenue Source Tab - CUPA	(C) Source Tab - Utility Rate Forecast	(D) Total Water	(E) Total Wastewater
CUPA Forecast 2021	**2,073,818**	**2,664,330**	**0.64%**	**13,324**	**17,118**
CUPA Forecast 2022	**$ 2,813,087**	**$ 3,663,034**	**0.66%**	**$ 18,624**	**$ 24,251**

Description of calculations:
Forecasted revenue is multiplied by Utility Commission tax rate of .64% for 2021 and 0.66% for 2022

Notes/Source:
(A) CUPA Tab
(B) CUPA Tab
(C) Utility Rate Forecast Tab
(D) = (A)*(C)
(E) = (B)*(C)

Community Utilities of Pennsylvania, Inc.
Property Tax Expense Forecast

WP-DC-13 (Property Tax Expense)
Property Tax Expense Forecast

	A) Water Plant in Service	B) Wastewater Plant in Service	C) Water Property Tax Rate	D) Wastewater Property Tax Rate	(E) Total Water	(F) Total Wastewater
CUPA Forecast 2021	**14,865,865**	**24,094,967**	**0.14%**	**0.15%**	**21,312**	**36,800**
CUPA Forecast 2022	**16,159,623**	**27,073,908**	**0.14%**	**0.15%**	**23,167**	**41,350**

Description of calculations:
Forecasted property taxes for PA are based on historical averages of property tax to net plant in service.

Notes/Source:
(A) Plant in Service Tab
(B) Plant in Service Tab
(C) Property Tax Tab
(D) Property Tax Tab
(E) = (A) * (C)
(F) = (B) * (D)

Community Utilities of Pennsylvania, Inc.
Net Capital Investment Forecast

WP-DC-14 (Net Capital Investments)
Net Capital Investment Forecast

Spend Category	*Water - 2021-2022*	*Wastewater - 2021-2022*
Capital Projects	1,757,030.55	4,042,135.42
Plant (Captime and GL spend)	750,915.12	1,233,200.93
Vehicles	16,025.52	18,974.48
Computers	207,020.82	245,116.17
Total	**$ 2,730,992.00**	**$ 5,539,427.00**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025206
	:	
Community Utilities of Pennsylvania Inc. – Water Division	:	
	:	
Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025207
	:	
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
DAVID CLARK
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, David Clark, hereby certify that I am a Financial Analyst II for Corix Regulated Utilities U.S. and its subsidiaries, and that, in such capacity, I have provided testimony behalf of the Community Utilities of Pennsylvania Inc. ("CUPA").

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

<u>For Community Utilities of Pennsylvania Inc. Water Division</u>

- Direct Testimony, CUPA W Statement No. 3 (August 31 Errata) consisting of 23 pages of written testimony with accompanying exhibits including:
    - CUPA W Exhibit No. DMC-1 and DMC-2

- Rebuttal Testimony, CUPA W Statement No. 3-R consisting of 12 pages of written testimony with accompanying exhibits:
    - CUPA W Exhibit No. DMC-1R and DMC-2R

For Community Utilities of Pennsylvania Inc. Wastewater Division

- Direct Testimony, CUPA WW Statement No. 3 (August 31 Errata) consisting of 21 pages of written testimony with accompanying exhibits including:
    - CUPA WW Exhibit No. DMC-1 and DMC-2
- Rebuttal Testimony, CUPA WW Statement No. 3-R consisting of 14 pages of written testimony with accompanying exhibits:
    - CUPA WW Exhibit No. DMC-1R and DMC-2R

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021

David Clark
Financial Analyst II
Corix Regulated Utilities U.S.

CUPA W STATEMENT NO. 4
June 11, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

DIRECT TESTIMONY

OF

ANDREW DICKSON

WATER RATE DESIGN

SPONSORING CUPAW EXHIBIT NOS. AWD-1 AND AWD-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025206

Direct Testimony of Andrew Dickson

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME OCCUPATION AND BUSINESS ADDRESS.

A: My name is Andrew Dickson. I am a Senior Financial Analyst for Corix Regulated Utilities (US) Inc. ("CRUI"), formerly known as Utilities, Inc.[1] which changed its name to CRUI and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of UI. My business address is 500 W Monroe Street, Suite 3600, Chicago, IL 60661.

Q: PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

A: As Senior Financial Analyst, I am responsible for financial analysis of individual subsidiaries of CRUI, preparation of annual budgets and forecasts, and the preparation and submission of regulatory filings.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A: I am a Certified Business Economist, as designated by the National Association for Business Economics (NABE). I hold a Master of Science in Applied Economics (2017), in addition to a Bachelor of Arts in Economics (2016) and a Bachelor of Science in Biological Sciences (2016) from the University of Cincinnati. After my

[1] Utilities, Inc. changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

graduation, I joined Raftelis Financial Consultants as a cost of service and rate design consultant for water, wastewater, and electric utilities. I served as a consultant with Raftelis for approximately two years, until July of 2019, when I began my current role as a Senior Financial Analyst with the Company.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION OR ANY OTHER PUBLIC UTILITY COMMISSIONS?

A: I have not testified before the Pennsylvania Public Utility Commission. I have provided testimony before commissions in Virginia, Kentucky, and Illinois. Topics covered in that testimony range from elements of the revenue requirement, to cost allocations, to rate design such as low income rates.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: My testimony explains and supports the rate design that CUPA has proposed, including its proposed low-income rate. I am sponsoring two exhibits:

- CUPAW Exhibit No. AWD-1 – CUPA's water rate design
- CUPAW Exhibit No. AWD-2 – CUPA's proposed water rates

Q: PLEASE DESCRIBE THE CONTENTS OF CUPAW EXHIBIT NO. AWD-1.

A: CUPAW Exhibit No. AWD-1 contains the foundational design for CUPA's water rates. It walks step-by-step from the cost-of-service results and rate revenue requirement to rates. There are several key adjustments to note:

- Cost-of-Service Adjustment

- Fire Protection Adjustment
- Fixed Charge Recovery Adjustment

After these adjustments, rates are developed to produce base charges, hydrant charges, volumetric charges, and a low-income volumetric rate.

Q: PLEASE DESCRIBE THE COST-OF-SERVICE ADJUSTMENT.

A: The cost-of-service adjustment functions as a bridge between our rate revenue requirement and our cost-of-service study. It calculates the proportions identified for each functional cost component (base, max day, max hour, meters/services, billing, and fire protection) and maintains them in CUPA's rate revenue requirement of $2,813,087. The proportional amounts of the rate revenue requirement allocated to each functional cost component provides the foundation on which our rate design begins.

Q: PLEASE DESCRIBE THE FIRE PROTECTION ADJUSTMENT.

A: CUPA recognizes that our hydrant class's revenue requirement, as identified by our cost-of-service study (an adjusted amount of $176,673) will lead to a rate increase for the class that is difficult to manage. This adjustment cuts 50% of the rate revenue requirement that we propose to recover from the hydrant class, down to $88,336. With 744 hydrant bills (62 hydrants, billed once a month) projected for our test year, this produces a rate per hydrant of $118.73. CUPA has proposed that the remaining 50% ($88,336) of the fire protection rate revenue requirement be recovered through the fixed charge component of its other customers' rates. Fire protection is a necessary service to protect the residences and business of CUPA's service territories. This method helps ensure that those fire

protection services can be ready to serve customers without burdening the fire protection class.

Q: PLEASE DESCRIBE THE FIXED CHARGE RECOVERY ADJUSTMENT.

A: Revenue stability is a crucial consideration in any rate design. Revenue stability helps protect the Company's ability to consistently recover its revenue requirement, mitigating risk of over- and under-recovery from customers and reducing the frequency with which CUPA must consider revising rates (all else equal). Revenue stability, as a rate design consideration, competes with the control given to customers over their bills. CUPA recognizes this conflict, and has produced an adjustment to its cost-of-service study results to balance these goals. CUPA's existing flat water rates (excluding hydrant charges) recovered just over 35% of the total rate revenue recovered in the base year of 2020. CUPA proposes maintaining this level of fixed charge recovery, necessitating an additional $348,678 be recovered from fixed charges in our rate design. CUPA's total fixed charge revenue requirement, after adjustments, is $1,085,584.

Q: HOW HAS CUPA DESIGNED ITS BASE RATES?

A: CUPA has leveraged the AWWA's meter flow equivalency factors and availability charge factors, as used in our cost-of-service study, to calculate equivalent (flow) meters on which to initiate its base charge design. Within the $1,085,584 fixed charge revenue requirement that CUPA has identified, there are $333,714 in costs associated with billing; these costs are readily identifiable as unaffected by meter size. The remaining $751,870, which includes the meters/services costs, fire protection adjustment, and fixed charge recovery adjustment, can be fairly recovered through meter flow equivalencies. Our basic charge

per equivalent flow meter (5/8" equivalents) is $17.31. A billing component of $7.53 (to recover the $333,714 in billing costs) is layered on top of each base charge, ensuring that $7.53 is the total in billing costs paid by each customer, regardless of meter size. For example, our 5/8" customers have a proposed base rate of $24.84 (sum of $17.31 and $7.53) and our 6" customers have a proposed base rate of $1,392.44 ($17.31 * flow equivalency factor for 6" meter (50) + $7.53).

Q: WHY HAS CUPA PROPOSED A LOW-INCOME RATE?

A: CUPA is aware that rate increases can be difficult for customers to manage. To assess affordability, CUPA is aware of several different methods, including analyzing hours worked at minimum wage or share of monthly income required to pay the bill. Our services are essential for survival and well-being, and as such, CUPA included affordability as a consideration in our proposed rate design. Specifically, CUPA assesses affordability the same way as the US EPA and the AWWA,[2] using a threshold of 2.5% of household income as the barometer for affordability. With no low-income rate, our customers who are at or below the poverty level may experience bills that are in excess of 2.5% of their household income. This low-income rate provides these customers with a rate they can opt-in to that modifies their volumetric rate to have a similar impact on household finances as the regular volumetric rate has on their more affluent neighbors.

[2] AWWA Affordability Assessment Tool (https://www.awwa.org/Portals/0/AWWA/ETS/Resources/AffordabilityAssessmentTool.pdf)

Q: WHAT IS THE OUTCOME OF THE LOW-INCOME RATE?

A: Without the low-income rate, our low-income households that have class average usage of 3.498 kilogallons would experience a bill that demands in excess of 3.5% of their household income. The low-income rate moves this measure down below 2.2%, making the bill fit the EPA's definition of affordability for water service. Without the low-income rate, all volume would be billed at a rate of $10.990 per 1,000 gallons. Our regular residential rate of $11.926 per 1,000 gallons is thus, $0.936 higher per 1,000 gallons to enable the low-income rate.

Q: WHO IS ELIGIBLE FOR THE LOW-INCOME RATE?

A: CUPA customers whose annual income falls below the federal poverty level, for a household of their size, will be eligible for the proposed low-income rate. Customers need only apply through a 3rd-party income verification service, whose assistance CUPA will enlist to protect customer privacy, who will then inform the Company that for the next 12 months, that customer should be charged our low-income volumetric rate for usage up to the class average (3.498kgals). Because the low-income rate is intended to provide relief to customers using average volumes of water, usage over the class average will be charged at the regular residential volumetric rate.

Q: HOW HAS THE LOW-INCOME RATE BEEN DESIGNED?

A: Several assumptions underlie the low-income rate design. We have relied on the most current US Census Bureau statistics for the state of Pennsylvania to determine that 12% of CUPA's customers are likely to be eligible for the low-income rate, which is the share of households that fall below the federal poverty level in the 2019 American Community

Survey data published by the US Census Bureau. CUPA thus assumed that 12% of the residential customers are from low-income households, and 12% of the residential class usage is from low-income rate eligible customers.

To develop the equivalent gallons that these low-income households use, we have developed a ratio based on the poverty-level income of the average Pennsylvania household (average Pennsylvania household has 2.50 members, which we round to 3, indicating a poverty level of annual income of $21,960) compared to the Pennsylvania median household income, $63,463. This means that each gallon used by a low-income customer will be charged 34.6% of the regular residential rate; the same percentage as these customers' incomes is assumed to be of the median Pennsylvania household. The outcome of this is a rate that secures a similar percentage of the low-income household's income as that of a typical, median-income household. This is in-line with EPA definitions of affordability for water and sewer rates in their Affordability Assessment Tool for Federal Water Mandates.[3]

Our volumetric revenue requirement is identified as the remaining revenue left to be recovered after the design of our hydrant charge and base charges. We have proposed recovery of $1,639,167 from our volumetric charges, $1,617,052 of which we propose to recover from our residential class. Our low-income rate will recover $72,864 of this residential class volume revenue requirement.

This rate design ensures there is no interclass subsidization. Residential customers pay for residential class revenue requirements, and those residential customers most impacted by

[3] AWWA Affordability Assessment Tool (https://www.awwa.org/Portals/0/AWWA/ETS/Resources/AffordabilityAssessmentTool.pdf)

our proposed rates will be able to opt-in to a mitigatory rate. The low-income rate is $4.127 per 1,000 gallons, enabling a decrease of 21% in a typical low-income residential bill compared to existing rates, and $27 lower than their more affluent peers under our proposed rates.

Q: WHY SHOULD THE PA PUC APPROVE THE USE OF SUCH A LOW-INCOME RATE?

A: This opt-in low-income rate has several distinct advantages: it enhances the affordability of essential service for customers who are least able to afford it, it does not impinge the interclass equity or fairness of rates, and provides the appropriate signaling to customers that the Company and the PA PUC recognize the modern-day challenges of maintaining a healthy household on a limited budget with increasing bills in the midst of the pandemic, and are taking steps to help Pennsylvania recover and flourish at the household level.

Q: PLEASE DESCRIBE THE CONTENTS OF CUPAW EXHIBIT NO. AWD-2.

A: CUPAW Exhibit No. AWD-2 contains a summary of CUPA's proposed rates and compares them to existing rates.

Q: DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

CUPA W Exhibit AWD-1

Community Utilities of Pennsylvania Inc.
Water
Rate Design
Future Test Year Ended December 31, 2022

Cost-of-Service Functionalization (page 11)

Functional Cost Component	COS	Proportions	Adjusted COS (to match rate revenue requirement)
Base	$ 1,123,065	40%	$ 1,121,166
Max Day	$ 352,263	13%	$ 351,667
Max Hour	$ 515,883	18%	$ 515,011
Meters/Services	$ 315,389	11%	$ 314,856
Billing	$ 334,279	12%	$ 333,714
Fire Protection	$ 176,972	6%	$ 176,673
	$ 2,817,851		$ 2,813,087

Development of Hydrant Charge

Revenue Requirement	$ 88,336
Annualized Hydrants	744
Monthly Charge per Hydrant	**$ 118.73**

Equivalent Meters

Description	Annual Bill Count (1 bill per month)	5/8" Equivalency Factor (AWWA M1)	Equivalent Meters
Availability (Tamiment, converted to monthly)	3,936	0.45	1,771
Availability (All Other)	547	0.45	246
5/8"	39,723	1.00	39,723
3/4"	-	1.50	-
1"	60	2.50	149
1.5"	12	5.00	60
2"	35	8.00	283
3"	0	15.00	-
4"	0	25.00	-
6"	24	50.00	1,200
8"	0	80.00	-
10"	0	115.00	-
12"	0	215.00	-
	44,337		43,432

Existing Fixed Charge Recovery

$	743,116	Base Charge Recovery, 2020 (ex. Fire Protection)
$	2,096,219	Total Charge Recovery, 2020
	35%	

Modification of COS for Fixed Charge Recovery

$	648,570	Meters/Services and Billing Costs	23%
$	88,336	Fire Protection Adjustment	
$	348,678	Fixed Charge Recovery Adjustment	35%
$	1,085,584		

Fixed Charge Component Development

Meters/Services	$ 314,856
Fire Protection Adjustment	$ 88,336
True-up for Fixed Charge Recovery	$ 348,678
Revenue to be Recovered via Fixed Charge per Equivalent Meter	**$ 751,870**
Equivalent Meters	43,432
Charge per Equivalent Meter	**$ 17.31**

Billing Component Development

Revenue Required for Billing Costs	$ 333,714
Bill Count (annual, 1 per month)	44,337
Billing Component per Bill	**$ 7.53**

Schedule of Fixed Charges	Charge (per Month)	
Availability	$ 15.32	$ 68,660.06
5/8"	$ 24.84	$ 986,645.28
3/4"	$ 33.49	$ -
1"	$ 50.81	$ 3,036.46
1.5"	$ 94.08	$ 1,129.00
2"	$ 146.02	$ 5,159.29
3"	$ 267.20	$ -
4"	$ 440.31	$ -
6"	$ 873.09	$ 20,954.27
8"	$ 1,392.44	$ -
10"	$ 1,998.33	$ -
12"	$ 3,729.47	$ -

Volumetric Revenue Requirement	**$**	**1,639,167**

Commercial and Residential Class Bills	Bills (Annual, 1 bill per month)	Volumes (gal)	Volume (gal) per Bill	Volumetric Revenue Requirement	Basic Volumetric Rates (per Kgal)
Residential	42,063	147,142,739	3,498	$ 1,617,052	$ 10.990
Commercial	419	2,012,313	4,802	$ 22,115	$ 10.990
Total	42,482	149,155,052		$ 1,639,167	

Median Household Income	$	63,463
Poverty Rate		12.00%
Median Household Size		2.5
Poverty Income with a 3 Person Household	$	21,960
Residentail Volume Equivalency Factor		0.35
Residential Bills Eligible for the Low-Income Rate		5,048
Volume (Kgals)Eligible for the Low-Income Rate		17,657
Volume Equivalency Factor		0.35
Residential Volume Equivalents		135,595.48
Regular Residential Rate	**$**	**11.926**
Low Income Residential Rate	**$**	**4.127**

Residential Volumetric Recovery	Volume (Kgal)	Rate	Recovery
Regular Residential	129,486	$ 11.926	$ 1,544,188
Low-Income Residential	17,657	$ 4.127	$ 72,864
	147,143		$ 1,617,052

CUPA W Exhibit AWD-2

Community Utilities of Pennsylvania Inc.
Water
Rate Design
Future Test Year Ended December 31, 2022

Fixed Charges

Meter Size	CUPA Existing Charge (Monthly)	*% Change CUPA, Proposed*	Tamiment Existing Charge (Monthly)	*% Change Tamiment, Proposed*	Proposed Charge (per Month)	
Availability	$ 18.81	*-18.6%*	$ 6.38	*140.1%*	$ 15.32	
5/8"	$ 17.25	*44.0%*	$ 18.18	*36.6%*	$ 24.84	**Tamiment Existing Charge represented is for Residential*
3/4"					$ 33.49	
1"	$ 43.13	*17.8%*			$ 50.81	
1.5"	$ 86.25	*9.1%*			$ 94.08	
2"	$ 138.00	*5.8%*			$ 146.02	
3"					$ 267.20	
4"					$ 440.31	
6"			$ 40.42	*2060.1%*	$ 873.09	**Tamiment Existing Charge represented is for Commercial*
8"					$ 1,392.44	
10"					$ 1,998.33	
12"					$ 3,729.47	
Hydrant (per Hydrant)	$ 28.13	*322.1%*			$ 118.73	
Volumetric Charges						
Regular Residential Rate*	$ 9.28	*28.5%*	$ 5.13	*132.5%*	$ 11.926	**And, low-income customer usage over 3,500 gallons*
Low-Income Residential Rate*	$ 9.28	*-55.5%*	$ 5.13	*-19.6%*	$ 4.127	**Income verified below the federal poverty line, usage up to 3,500 gallons*
Commercial Rate	$ 9.28	*18.4%*	$ 5.13	*114.2%*	$ 10.990	

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025206
	:	
Community Utilities of Pennsylvania Inc. – Water Division	:	
	:	
Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025207
	:	
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
ANDREW DICKSON
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, Andrew Dickson, hereby certify that I am the Senior Financial Analyst for Corix Regulated Utilities (US) Inc., and that, in such capacity, I have provided testimony behalf of the Community Utilities of Pennsylvania Inc. ("CUPA").

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

<u>For Community Utilities of Pennsylvania Inc. Water Division</u>

- Direct Testimony, CUPA W Statement No. 4 consisting of 8 pages of written testimony with accompanying exhibits including:
    - CUPA W Exhibit No. AWD-1 and AWD-2

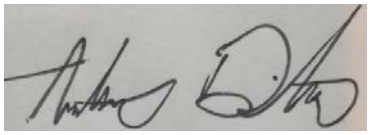
- Rebuttal Testimony, CUPA W Statement No. 4-R consisting of 22 pages of written testimony with accompanying exhibits:
    - CUPA W Rebuttal Exhibit No. AWD-1R, AWD-2R, AWD-3R, AWD-4R, AWD-5R, AWD-6R, AWD-7R and AWD-8R
- Rejoinder Testimony, CUPA W Statement 4-RJ consisting of 18 pages of written testimony.

For Community Utilities of Pennsylvania Inc. Wastewater Division

- Direct Testimony, CUPA WW Statement No. 4 consisting of 4 pages of written testimony with accompanying exhibits including:
    - CUPA WW Exhibit No. AWD-1 and AWD-2
- Rebuttal Testimony, CUPA WW Statement No. 4-R consisting of 11 pages of written testimony with accompanying exhibits:
    - CUPA WW Exhibit No. AWD-1R
- Rejoinder Testimony, CUPA WW Statement 4-RJ consisting of 11 pages of written testimony.

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021



Andrew Dickson
Senior Financial Analyst
Corix Regulated Utilities (US) Inc.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3025206 & R-2021-3025207

CUPA Statement No. 5

Direct Testimony of

Dylan W. D'Ascendis, CRRA, CVA

on behalf of

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

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I. INTRODUCTION

A. WITNESS IDENTIFICATION

Q. Please state your name and business address.

A. My name is Dylan W. D'Ascendis. My business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

Q. By whom are you employed and in what capacity?

A. I am a Director at ScottMadden, Inc.

B. BACKGROUND AND QUALIFICATIONS

Q. Please summarize your professional experience and educational background.

A. I have offered expert testimony on behalf of investor-owned utilities in over 25 state regulatory commissions in the United States, the Federal Energy Regulatory Commission, the Alberta Utility Commission, and one American Arbitration Association panel on issues including, but not limited to, common equity cost rate, rate of return, valuation, capital structure, class cost of service, and rate design.

On behalf of the American Gas Association ("AGA"), I calculate the AGA Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured on a monthly basis. The AGA Gas Index and AGIF are a market capitalization weighted index and mutual fund, respectively, comprised of the common stocks of the publicly traded corporate members of the AGA.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In 2011, I was awarded the professional designation "Certified Rate

of Return Analyst" by SURFA, which is based on education, experience, and the successful completion of a comprehensive written examination.

I am also a member of the National Association of Certified Valuation Analysts ("NACVA") and was awarded the professional designation "Certified Valuation Analyst" by the NACVA in 2015.

I am a graduate of the University of Pennsylvania, where I received a Bachelor of Arts degree in Economic History. I have also received a Master of Business Administration with high honors and concentrations in Finance and International Business from Rutgers University.

The details of my educational background and expert witness appearances are included in Appendix A.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present evidence on behalf of Community Utilities of Pennsylvania, Inc. ("CUPA" or the "Company") about the appropriate capital structure and corresponding cost rates the Company should be given the opportunity to earn on its jurisdictional rate base.

Q. Have you prepared an Exhibit in support of your recommendation?

A. Yes. I have prepared Exhibit No. CUPA-DWD which contains Schedules DWD-1 through DWD-8. Exhibit No. CUPA-DWD has been prepared by me or under my direct supervision.

Q. What is your recommended cost of capital for CUPA?

A. I recommend the Pennsylvania Public Utility Commission (the "Commission") authorize the Company the opportunity to earn an overall rate of return of 7.58%

based on the actual capital structure of CUPA's parent, CORIX Regulated Utilities, Inc. ("CRU") at December 31, 2020. The ratemaking capital structure consists of 52.32% long-term debt at an embedded cost rate of 5.05% and 47.68% common equity at my recommended common equity cost rate of 10.35%. The overall rate of return is summarized on page 1 of Schedule DWD-1 and in Table 1 below:

Table 1: Summary of Overall Rate of Return

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.94%
Total	100.00%		7.58%

III. SUMMARY

Q. Please summarize your recommended common equity cost rate.

A. My recommended common equity cost rate of 10.35% is summarized on page 2 of Schedule DWD-1. I have assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical, risk to CUPA. Using companies of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the *Hope*[1] and *Bluefield*[2] cases. No proxy group can be identical in risk to any single company, so there must be an evaluation of relative risk between the company and the proxy group to see if it is appropriate to make adjustments to the proxy group's indicated rate of return.

My recommendation results from the application of several cost of common equity models, specifically the Discounted Cash Flow ("DCF") model, the Risk Premium Model ("RPM"), and the Capital Asset Pricing Model ("CAPM"), to the

[1] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944). *("Hope")*
[2] *Bluefield Water Works Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679 (1922). ("*Bluefield*")

market data of a proxy group of seven water companies ("Utility Proxy Group") whose selection criteria will be discussed below. In addition, I also applied the DCF, RPM, and CAPM to a proxy group of domestic, non-price regulated companies comparable in total risk to the Utility Proxy Group ("Non-Price Regulated Proxy Group").

The results derived from each are as follows:

Table 2: Summary of Common Equity Cost Rate

Discounted Cash Flow Model	8.88%
Risk Premium Model	10.90%
Capital Asset Pricing Model	11.04%
Market Models Applied to Comparable Risk, Non-Price Regulated Companies	11.08%
Indicated Range of Common Equity Cost Rates Before Adjustments for Company-Specific Risk	8.88% - 11.08%
Size Risk Adjustment	1.00%
Indicated Range of Common Equity Cost Rates after Adjustment	9.88% - 12.08%
Recommended Cost of Common Equity	10.35%

After analyzing the indicated common equity cost rates derived through these models, the indicated range of common equity cost rates produced by the models are between 8.88% and 11.08%, which are applicable to the Utility Proxy Group. In view of these model results, it is clear that the DCF model is a low side outlier when compared to the results of the other models.

The indicated range of common equity cost rates was then adjusted upward by 1.00% to reflect CUPA's smaller size relative to the Utility Proxy Group. These adjustments result in a Company-specific range of common equity cost rates

between 9.88% and 12.08%. From this range of results, I recommend the Commission consider a common equity cost rate of 10.35% for use in setting rates for the Company.

IV. GENERAL PRINCIPLES

Q. What general principles have you considered in arriving at your recommended common equity cost rate of 10.35%?

A. In unregulated industries, the competition of the marketplace is the principal determinant of the price of products or services. For regulated public utilities, regulation must act as a substitute for marketplace competition. Assuring that the utility can fulfill its obligations to the public, while providing safe and reliable service at all times, requires a level of earnings sufficient to maintain the integrity of presently invested capital. Sufficient earnings also permit the attraction of needed new capital at a reasonable cost, for which the utility must compete with other firms of comparable risk, consistent with the fair rate of return standards established by the U.S. Supreme Court in the previously cited *Hope* and *Bluefield* decisions. Consequently, marketplace data must be relied on in assessing a common equity cost rate appropriate for ratemaking purposes. Just as the use of the market data for the proxy group adds reliability to the informed expert's judgment used in arriving at a recommended common equity cost rate, the use of multiple generally accepted common equity cost rate models also adds reliability and accuracy when arriving at a recommended common equity cost rate.

A. BUSINESS RISK

Q. Please define business risk and explain why it is important to the determination of a fair rate of return.

A. Business risk is the riskiness of a company's common stock without the use of debt and/or preferred capital. Examples of such general business risks faced by all utilities (*i.e.*, electric, natural gas distribution, and water) include size, the quality of management, the regulatory environment in which utilities operate, customer mix and concentration of customers, service territory growth, and capital intensity. All of these have a direct bearing on earnings.

Consistent with the basic financial principle of risk and return, business risk is important to the determination of a fair rate of return, because the higher the level of risk, the higher the rate of return investors demand.

Q. What business risks do the water and wastewater industries face in general?

A. Water and wastewater utilities have an ever-increasing responsibility to be stewards of the environment from which water supplies are drawn in order to preserve and protect essential natural resources of the United States. This increased environmental stewardship is a direct result of compliance with the Safe Water Drinking Act, as well as a response to continuous monitoring by the Environmental Protection Agency ("EPA") and state and local governments, of the water supply for potential contaminants and their resultant regulations. This, plus aging infrastructure, necessitate additional capital investment in the distribution and treatment of water, exacerbating the pressure on free cash flows arising from increased capital expenditures for infrastructure repair and replacement. The

significant amount of capital investment and, hence, high capital intensity, is a major risk factor for the water and wastewater utility industry.

Value Line Investment Survey ("*Value Line*") observes the following about the water utility industry:

> As we mentioned, the average age of water pipelines in the United States is estimated to be more than 50 years old, with it not being unusual for some pipes to having been laid 75 to 100 years ago. Thus, capital budgets are usually burdensome, as miles and miles of new pipe are installed annually. Also, because of the size of the outlays, not all of the expenditures can be financed with internally generated funds. Many in the industry have to rely upon debt.
>
> * * *
>
> Another of the industry's attractive attributes is its regulatory climate, or basically the relationship between the water companies and authorities. Regulated businesses and utilities are often involved in disagreements and lawsuits. An example of this would be electric and gas companies and the states they operate in. Since authorities establish the rate of return that utilities can earn, a constructive relationship between the parties cannot be underestimated.[3]

The water and wastewater industry also experiences low depreciation rates. Depreciation rates are one of the principal sources of internal cash flows for all utilities (through a utility's depreciation expense) and are vital for a company to fund ongoing replacements and repairs of water and wastewater systems. Water / wastewater utility assets have long lives, and therefore have long capital recovery periods. As such, they face greater risk due to inflation, which results in a higher replacement cost per dollar of net plant.

Substantial capital expenditures, as noted by *Value Line,* will require significant financing. The three sources of financing typically used are debt, equity

[3] *Value Line Investment Survey*, January 8, 2021.

(common and preferred), and cash flow. All three are intricately linked to the opportunity to earn a sufficient rate of return as well as the ability to achieve that return. Consistent with *Hope* and *Bluefield*, the return must be sufficient to maintain credit quality as well as enable the attraction of necessary new capital, be it debt or equity capital. If unable to raise debt or equity capital, the utility must turn to either retained earnings or free cash flow,[4] both of which are directly linked to earning a sufficient rate of return. The level of free cash flow represents a utility's ability to meet the needs of its debt and equity holders. If either retained earnings or free cash flow is inadequate, it will be nearly impossible for the utility to attract the needed capital for new infrastructure investment necessary to ensure quality service to its customers. An insufficient rate of return can be financially devastating for utilities as well as a public safety issue for their customers.

The water and wastewater utility industry's high degree of capital intensity and low depreciation rates, coupled with the need for substantial infrastructure capital spending, require regulatory support in the form of adequate and timely rate relief, and in particular, a sufficient authorized return on common equity, so that the industry can successfully meet the challenges it faces.

B. <u>FINANCIAL RISK</u>

Q. Please define financial risk and explain why it is important to the determination of a fair rate of return.

A. Financial risk is the additional risk created by the introduction of debt and preferred stock into the capital structure. The higher the proportion of debt and preferred stock in the capital structure, the higher the financial risk (*i.e.* likelihood of default).

[4] Free Cash Flow = Operating Cash Flow (Funds From Operations) minus Capital Expenditures.

Therefore, consistent with the basic financial principle of risk and return, investors demand a higher common equity return as compensation for bearing higher default risk.

Q. Can bond and credit ratings be a proxy for the combined business and financial risk (*i.e.*, investment risk of an enterprise)?

A. Yes, similar bond ratings/issuer credit ratings reflect, and are representative of, similar combined business and financial risks (*i.e.*, total risk) faced by bond investors.[5] Although specific business or financial risks may differ between companies, the same bond/credit rating indicates that the combined risks are roughly similar, albeit not necessarily equal, as the purpose of the bond/credit rating process is to assess credit quality or credit risk, and not common equity risk.

Q. That being said, do rating agencies reflect company size in their bond ratings?

A. No. Neither S&P nor Moody's have minimum company size requirements for any given rating level. This means, all else equal, a relative size analysis needs to be conducted for companies with similar bond ratings.

V. COMMUNITY UTILITIES OF PENNSYLVANIA AND THE UTILITY PROXY GROUP

Q. Are you familiar with the operations of CUPA?

A. Yes. CUPA provides water service to approximately 3,300 customers and wastewater service to approximately 3,900 customers throughout Pennsylvania. As a wholly-owned subsidiary of CRU, CUPA is not publicly-traded.

[5] Risk distinctions within S&P's bond rating categories are recognized by a plus or minus, i.e., within the A category, an S&P rating can be at A+, A, or A-. Similarly, risk distinctions for Moody's ratings are distinguished by numerical rating gradations, i.e., within the A category, a Moody's rating can be A1, A2 and A3.

Q. Please explain how you chose your Utility Proxy Group.

A. The basis of selection for the Utility Proxy Group was to select those companies which meet the following criteria:

(i) They are included in the Water Utility Group of *Value Line's Standard Edition* (January 8, 2021);

(ii) They have 70% or greater of 2019 total operating income and 70% or greater of 2019 total assets attributable to regulated water operations;

(iii) At the time of preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (*i.e.*, one publicly-traded utility merging with or acquiring another);

(iv) They have not cut or omitted their common dividends during the five years ending 2019 or through the time of the preparation of this testimony;

(v) They have *Value Line* and Bloomberg Professional Services ("Bloomberg") adjusted betas;

(vi) They have a positive *Value Line* five-year dividends per share ("DPS") growth rate projection; and

(vii) They have *Value Line*, Zacks, Yahoo! Finance, or Bloomberg consensus five-year earnings per share ("EPS") growth rate projections.

The following seven companies met these criteria: American States Water Co., American Water Works Co., Inc., California Water Service Group, Essential Utilities, Inc., Middlesex Water Co., SJW Corp., and York Water Co.

Q. Please describe Schedule DWD-2, page 1.

A. Page 1 of Schedule DWD-2 contains comparative capitalization and financial statistics for the Utility Proxy Group identified above for the years 2015 to 2019.

During the five-year period ending 2019, the historically achieved average earnings rate on book common equity for the group averaged 10.45%. The average common equity ratio based on total permanent capital (excluding short-term debt) was 53.80%, and the average dividend payout ratio was 60.34%.

Total debt to earnings before interest, taxes, depreciation, and amortization for the years 2015 to 2019 ranges between 3.41x and 5.54x, with an average of 4.00x. Funds from operations to total debt range from 14.49% to 25.81%, with an average of 21.64%.

VI. CAPITAL STRUCTURE

Q. What capital structure ratios do you recommend be employed in developing an overall fair rate of return appropriate for the Company?

A. I recommend the use of the actual capital structure of CRU at December 31, 2020 as CUPA's ratemaking capital structure in this proceeding. CUPA's ratemaking capital structure consists of 52.32% long-term debt and 47.68% common equity as shown on page 1 of Schedule DWD-1.

Q. How does CUPA's ratemaking common equity ratio of 47.68% compare with the equity ratios maintained by the companies in your Utility Proxy Group?

A. CUPA's ratemaking common equity ratio of 47.68% is reasonable and consistent with the range of common equity ratios maintained, on average, by the companies in the Utility Proxy Group on which I base my recommended common equity cost rate. As shown on page 2 of Schedule DWD-2, the common equity ratios of the Utility Proxy Group range from 40.53% to 68.13% in 2019. In my opinion, CUPA's ratemaking equity ratio of 47.68% is appropriate.

Q. What long-term debt cost rate is most appropriate for CUPA in this proceeding?

A. CRU's actual long-term debt cost rate at December 30, 2020 of 5.05% is reasonable and appropriate as CUPA's cost of long-term debt in this proceeding.

VII. COMMON EQUITY COST RATE MODELS

Q. Are your cost of common equity models market-based models?

A. Yes. The DCF model is market-based because market prices are used in developing the dividend yield component of the model. The RPM is market-based because the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of bond/credit risk. In addition, the use of beta coefficients (β) to determine the equity risk premium reflects the market's assessment of market/systematic risk, since beta coefficients are derived from regression analyses of market prices. The Predictive Risk Premium Model ("PRPM") uses monthly market returns in addition to expectations of the risk-free rate. The CAPM is market-based for many of the same reasons that the RPM is market-based (*i.e.*, the use of expected bond yields and beta coefficients). Selection of the comparable risk non-price regulated companies is market-based because it is based on statistics which result from regression analyses of market prices and reflect the market's assessment of total risk.

A. DISCOUNTED CASH FLOW MODEL

Q. What is the theoretical basis of the DCF model?

A. The theory underlying the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be

determined by discounting those cash flows at the cost of capital, or the investors' capitalization rate. DCF theory indicates that an investor buys a stock for an expected total return rate, which is derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate). Mathematically, the dividend yield on market price plus a growth rate equals the capitalization rate, *i.e.*, the total common equity return rate expected by investors.

Q. Which version of the DCF model did you use?

A. I used the single-stage constant growth DCF model.

Q. Please describe the dividend yield you used in your application of the DCF model.

A. The unadjusted dividend yields are based on the proxy companies' dividends as of February 26, 2021, divided by the average of closing market prices for the 60 trading days ending February 26, 2021.[6]

Q. Please explain your adjustment to the dividend yield.

A. Because dividends are paid periodically (quarterly), as opposed to continuously (daily), an adjustment must be made to the dividend yield. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

DCF theory calls for the use of the full growth rate, or D_1, in calculating the dividend yield component of the model. Since the various companies in the Utility Proxy Group increase their quarterly dividend at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the dividend yield component, or $D_{1/2}$. Because the dividend should be representative of the next 12-month period, my adjustment is a conservative approach that does

[6] *See,* Schedule DWD-3, page 1, Column 1.

not overstate the dividend yield. Therefore, the actual average dividend yields in Column 1 on page 1 of Schedule DWD-3 have been adjusted upward to reflect one-half the average projected growth rate shown in Column 6.

Q. Please explain the basis of the growth rates you applied to the Utility Proxy Group in your DCF model.

A. Investors with more limited resources than institutional investors are likely to rely on widely available financial information services, such as *Value Line*, Zacks, Yahoo! Finance, and Bloomberg. Investors realize that analysts have significant insight into the dynamics of the industries and individual companies they analyze, as well as companies' abilities to effectively manage the effects of changing laws and regulations, and ever-changing economic and market conditions. For these reasons, I used analysts' five-year forecasts of EPS growth in my DCF analysis.

Over the long run, there can be no growth in DPS without growth in EPS. Security analysts' earnings expectations have a more significant influence on market prices than dividend expectations. Thus, the use of earnings growth rates in a DCF analysis provides a better match between investors' market price appreciation expectations and the growth rate component of the DCF.

Q. Please summarize the DCF model results.

A. As shown on page 1 of Schedule DWD-3, the mean result of the application of the single-stage DCF model is 8.90%, the median result is 8.85%, and the average of the two is 8.88% for the Utility Proxy Group. In arriving at a conclusion for the DCF-indicated common equity cost rate for the Utility Proxy Group, I have relied on an average of the mean and the median results of the DCF. This approach

takes into consideration all the proxy companies' results, while mitigating the high and low outliers of those individual results.

B. <u>THE RISK PREMIUM MODEL</u>

Q. Please describe the theoretical basis of the RPM.

A. The RPM is based on the fundamental financial principle of risk and return, namely, that investors require greater returns for bearing greater risk. The RPM recognizes that common equity capital has greater investment risk than debt capital, as common equity shareholders are behind debt holders in any claim on a company's assets and earnings. As a result, investors require higher returns from common stocks than from investment in bonds, to compensate them for bearing the additional risk.

While it is possible to directly observe bond returns and yields, investors' required common equity return cannot be directly determined or observed. According to RPM theory, one can estimate a common equity risk premium over bonds (either historically or prospectively), and use that premium to derive a cost rate of common equity. The cost of common equity equals the expected cost rate for long-term debt capital, plus a risk premium over that cost rate, to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings in the event of a liquidation.

Q. Please explain how you derived your indicated cost of common equity based on the RPM.

A. I relied on the results of the application of two risk premium methods. The first method is the PRPM, while the second method is a risk premium model using a total market approach.

Q. Please explain the PRPM.

A. The PRPM, published in the *Journal of Regulatory Economics* and *The Electricity Journal*[7], was developed from the work of Robert F. Engle who shared the Nobel Prize in Economics in 2003 "for methods of analyzing economic time series with time-varying volatility ("ARCH")".[8] Engle found that volatility changes over time and is related from one period to the next, especially in financial markets. Engle discovered that the volatility in prices and returns clusters over time and is therefore highly predictable and can be used to predict future levels of risk and risk premiums.

The PRPM estimates the risk / return relationship directly, as the predicted equity risk premium is generated by the prediction of volatility or risk. The PRPM is not based on an estimate of investor behavior, but rather on the evaluation of the results of that behavior (*i.e.*, the variance of historical equity risk premiums).

The inputs to the model are the historical returns on the common shares of each company in the Utility Proxy Group minus the historical monthly yield on long-term U.S. Treasury securities through February 2021. Using a generalized form of ARCH, known as GARCH, I calculated each Utility Proxy Group company's projected equity risk premium using Eviews© statistical software. When the GARCH Model is applied to the historical return data, it produces a predicted

[7] Autoregressive conditional heteroscedasticity. See "A New Approach for Estimating the Equity Risk Premium for Public Utilities", Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. *The Journal of Regulatory Economics* (December 2011), 40:261-278 and "Comparative Evaluation of the Predictive Risk Premium Model, the Discounted Cash Flow Model and the Capital Asset Pricing Model for Estimating the Cost of Common Equity", Richard A. Michelfelder, Ph.D, Pauline M. Ahern, Dylan W. D'Ascendis, and Frank J. Hanley, *The Electricity Journal* (May 2013), 84-89.

[8] www.nobelprize.org.

GARCH variance series[9] and a GARCH coefficient[10]. Multiplying the predicted monthly variance by the GARCH coefficient, then annualizing it[11], produces the predicted annual equity risk premium. I then added the forecasted 30-year U.S. Treasury Bond yield, 2.48%[12], to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. The 30-year Treasury yield is a consensus forecast derived from the *Blue Chip Financial Forecasts ("Blue Chip")*[13]. The mean PRPM indicated common equity cost rate for the Utility Proxy Group is 11.91%, the median is 10.79%, and the average of the two is 11.35%. Consistent with my reliance on the average of the median and mean results of the DCF, I relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 11.35%.

Q. Please explain the total market approach RPM.

A. The total market approach RPM adds a prospective public utility bond yield to an average of: 1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, and 2) an equity risk premium based on the S&P Utilities Index.

Q. Please explain the basis of the expected bond yield of 3.69% applicable to the Utility Proxy Group.

A. The first step in the total market approach RPM analysis is to determine the expected bond yield. Because both ratemaking and the cost of capital, including common equity cost rate, are prospective in nature, a prospective yield on

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9 Illustrated on Columns 1 and 2 of page 2 of Schedule DWD-4.
10 Illustrated on Column 4 of page 2 of Schedule DWD-4.
11 Annualized Return = (1+Monthly Return)^12 – 1.
12 *See,* Column 6 of page 2 of Schedule DWD-4.
13 *Blue Chip Financial Forecasts*, December 1, 2020 at p. 14 and March 1, 2021 at p. 2.

similarly-rated long-term debt is essential. I rely on a consensus forecast of about 50 economists of the expected yield on Aaa-rated corporate bonds for the six calendar quarters ending with the second calendar quarter of 2022, and the long-term projections for 2022 to 2026, and 2027 to 2031 from *Blue Chip*. As shown on line No. 1 of page 3 of Schedule DWD-4, the average expected yield on Moody's Aaa-rated corporate bonds is 3.19%. In order to derive an expected yield on A2-rated public utility bonds, I make an upward adjustment of 0.45%, which represents a recent spread between Aaa-rated corporate bonds and A2-rated public utility bonds, in order to adjust the expected Aaa-rated corporate bond yield to an equivalent Moody's A2-rated public utility bond.[14] Adding that recent 0.45% spread to the expected Aaa-rated corporate bond yield of 3.19% results in an expected A2-rated public utility bond of 3.64%.

Since the Utility Proxy Group's average Moody's long-term issuer rating is A2/A3, another adjustment to the expected A2-rated public utility bond yield is needed to reflect the difference in bond ratings. An upward adjustment of 0.05%, which represents one-sixth of a recent spread between A2- and Baa2-rated public utility bond yields, is necessary to make the A2-rated prospective bond yield applicable to an A2/A3-rated public utility bond.[15] Adding the 0.05% to the 3.64% prospective A2-rated public utility bond yield results in a 3.69% expected bond yield for the Utility Proxy Group.

[14] As shown on Line No. 2 and explained in Note 2 of page 3 of Schedule DWD-4.
[15] As shown on Line No. 4 and explained in Note 3 on page 3 of Schedule DWD-4.

Table 3: Summary of the Calculation of the Utility Proxy Group Projected Bond Yield[16]

Prospective Yield on Moody's Aaa-Rated Corporate Bonds (*Blue Chip)*	3.19%
Adjustment to Reflect Yield Spread Between Moody's Aaa-Rated Corporate Bonds and Moody's A2-Rated Utility Bonds	0.45%
Adjustment to Reflect the Utility Proxy Group's Average Moody's Bond Rating of A2/A3	0.05%
Prospective Bond Yield Applicable to the Utility Proxy Group	3.69%

To develop the indicated ROE using the total market approach RPM, this prospective bond yield is then added to the average of the three different equity risk premiums described below.

Q. Please explain how the beta-derived equity risk premium is determined.

A. The components of the beta-derived risk premium model are: 1) an expected market equity risk premium over corporate bonds, and 2) the beta coefficient. The derivation of the beta-derived equity risk premium that I applied to the Utility Proxy Group is shown on lines 1 through 9 of page 8 of Schedule DWD-4. The total beta-derived equity risk premium I applied was based on an average of: 1) Ibbotson-based equity risk premiums; 2) *Value Line*-based equity risk premiums; and 3) Bloomberg-based equity risk premium. Each of these is described in turn.

Q. How did you derive a market equity risk premium based on long-term historical data?

A. To derive a historical market equity risk premium, I used the most recent holding period returns for the large company common stocks from the Stocks, Bonds, Bills,

[16] As shown on page 3 of Attachment DWD-4.

and Inflation ("SBBI") 2020 Yearbook ("SBBI – 2020")[17] less the average historical yield on Moody's Aaa/Aa-rated corporate bonds for the period 1928 to 2019. The use of holding period returns over a very long period of time is appropriate because it is consistent with the long-term investment horizon presumed by investing in a going concern, *i.e.*, a company expected to operate in perpetuity.

SBBI's long-term arithmetic mean monthly total return rate on large company common stocks was 11.83% and the long-term arithmetic mean monthly yield on Moody's Aaa/Aa-rated corporate bonds was 6.05%.[18] As shown on line 1 of page 8 of Schedule DWD-4, subtracting the mean monthly bond yield from the total return on large company stocks results in a long-term historical equity risk premium of 5.78%.

I used the arithmetic mean monthly total return rates for the large company stocks and yields (income returns) for the Moody's Aaa/Aa-rated corporate bonds, because they are appropriate for the purpose of estimating the cost of capital as noted in SBBI – 2020.[19] The use of the arithmetic mean return rates and yields is appropriate because historical total returns and equity risk premiums provide insight into the variance and standard deviation of returns needed by investors in estimating future risk when making a current investment. If investors relied on the geometric mean of historical equity risk premiums, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, which is critical to risk analysis.

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17 SBBI Appendix A Tables: Morningstar Stocks, Bonds, Bills, & Inflation 1926-2019.
18 As explained in Note 1 on page 9 of Schedule DWD-4.
19 SBBI – 2020, at 10-22.

Q. Please explain the derivation of the regression-based market equity risk premium.

A. To derive the regression analysis-derived market equity risk premium of 9.15%, shown on line 2 of page 8 of Schedule DWD-4, I used the same monthly annualized total returns on large company common stocks relative to the monthly annualized yields on Moody's Aaa/Aa-rated corporate bonds as mentioned above. The relationship between interest rates and the market equity risk premium was modeled using the observed monthly market equity risk premium as the dependent variable, and the monthly yield on Moody's Aaa/Aa-rated corporate bonds as the independent variable. I used a linear Ordinary Least Squares ("OLS") regression, in which the market equity risk premium is expressed as a function of the Moody's Aaa/Aa-rated corporate bonds yield:

$$RP = \alpha + \beta\ (R_{Aaa/Aa})$$

Q. Please explain the derivation of a PRPM equity risk premium.

A. I used the same PRPM approach described previously to develop another equity risk premium estimate. The inputs to the model are the historical monthly returns on large company common stocks minus the monthly yields on Aaa/Aa-rated corporate bonds during the period from January 1928 through February 2021.[20] Using the previously discussed generalized form of ARCH, known as GARCH, the projected equity risk premium is determined using Eviews© statistical software. The resulting PRPM predicted market equity risk premium is 9.69%.[21]

[20] Data from January 1928-December 2019 is from SBBI – 2019. Data from January – February 2021 is from Bloomberg Professional Services.

[21] Shown on Line No. 3 on page 8 of Schedule DWD-4.

Q. Please explain the derivation of a projected equity risk premium based on *Value Line* data for your RPM analysis.

A. As noted previously, because both ratemaking and the cost of capital are prospective, a prospective market equity risk premium is needed. The derivation of the forecasted or prospective market equity risk premium can be found in Note 4 on page 9 of Schedule DWD-4. Consistent with my calculation of the dividend yield component in my DCF analysis, this prospective market equity risk premium is derived from an average of the three- to five-year median market price appreciation potential by *Value Line* for the 13 weeks ending February 26, 2021, plus an average of the median estimated dividend yield for the common stocks of the 1,700 firms covered in *Value Line*'s Standard Edition.[22]

The average median expected price appreciation is 30%, which translates to an 6.78% annual appreciation, and when added to the average of *Value Line's* median expected dividend yields of 1.97%, equates to a forecasted annual total return rate on the market of 8.75%. The forecasted Aaa-rated bond yield of 3.19% is deducted from the total market return of 8.75%, resulting in an equity risk premium of 5.56%, shown on page 8, line 4 of Schedule DWD-4.

Q. Please explain the derivation of an equity risk premium based on the S&P 500 companies.

A. Using data from *Value Line*, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The expected total return for the S&P 500 is 14.34%.

[22] As explained in detail in page 2, Note 1 of Schedule DWD-5.

Subtracting the prospective yield on Aaa-rated Corporate bonds of 3.19% results in a 11.15% projected equity risk premium.

Q. Please explain the derivation of an equity risk premium based on Bloomberg data.

A. Using data from Bloomberg, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation, identical to the method described above. The expected total return for the S&P 500 is 16.35%. Subtracting the prospective yield on Aaa-rated Corporate bonds of 3.19% results in a 13.16% projected equity risk premium.

Q. What is your conclusion of a beta-derived equity risk premium for use in your RPM analysis?

A. I gave equal weight to the six equity risk premiums in arriving at my conclusion of 9.08%.[23]

Table 4: Summary of the Calculation of the Equity Risk Premium Using Total Market Returns[24]

Historical Spread Between Total Returns of Large Stocks and Aaa and Aa2-Rated Corporate Bond Yields (1928 – 2020)	5.78%
Regression Analysis on Historical Data	9.15%
PRPM Analysis on Historical Data	9.69%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected Aaa Corporate Bond Yields	5.56%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected Aaa Corporate Bond Yields	11.15%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected Aaa Corporate Bond Yields	13.16%
Average	9.08%

[23] *See,* Line No. 7 on page 8 of Schedule DWD-4.
[24] As shown on page 8 of Attachment DWD-4.

After calculating the average market equity risk premium of 9.08%, I adjusted it by beta to account for the risk of the Utility Proxy Group. As discussed below, the beta coefficient is a meaningful measure of prospective relative risk to the market as a whole and is a logical means by which to allocate a company's, or proxy group's, share of the market's total equity risk premium relative to corporate bond yields. As shown on page 1 of Schedule DWD-5, the average of the mean and median beta coefficient for the Utility Proxy Group is 0.84. Multiplying the beta coefficient of the Utility Proxy Group of 0.84 by the market equity risk premium of 9.08% results in a beta-adjusted equity risk premium of 7.63% for the Utility Proxy Group.

Q. How did you derive the equity risk premium based on the S&P Utility Index and Moody's A-rated public utility bonds?

A. I estimated three equity risk premiums based on S&P Utility Index holding returns, and two equity risk premiums based on the expected returns of the S&P Utilities Index, using *Value Line* and Bloomberg data, respectively. Turning first to the S&P Utility Index holding period returns, I derived a long-term monthly arithmetic mean equity risk premium between the S&P Utility Index total returns of 10.74% and monthly A-rated public utility bond yields of 6.53% from 1928 to 2019, to arrive at an equity risk premium of 4.21%.[25] I then used the same historical data to derive an equity risk premium of 6.76% based on a regression of the monthly equity risk premiums. The final S&P Utility Index holding period equity risk premium involved applying the PRPM using the historical monthly equity risk premiums from January

[25] As shown on Line No. 1 on page 12 of Schedule DWD-4.

1928 to February 2021 to arrive at a PRPM-derived equity risk premium of 5.51% for the S&P Utility Index.

I then derived expected total returns on the S&P Utilities Index of 10.74% and 9.36% using data from *Value Line* and Bloomberg, respectively, and subtracted the prospective A2-rated public utility bond yield (3.64%[26]), which results in risk premiums of 7.10% and 5.72%, respectively. As with the market equity risk premiums, I averaged each risk premium to arrive at my utility-specific equity risk premium of 5.86%.

Table 5: Summary of the Calculation of the Equity Risk Premium Using S&P Utility Index Holding Returns[27]

Historical Spread Between Total Returns of the S&P Utilities Index and A2-Rated Utility Bond Yields (1928 – 2020)	4.21%
Regression Analysis on Historical Data	6.76%
PRPM Analysis on Historical Data	5.51%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P Utilities Index less Projected A2 Utility Bond Yields	7.10%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P Utilities Index less Projected A2 Utility Bond Yields	5.72%
Average	5.86%

Q. What is your conclusion of an equity risk premium for use in your total market approach RPM analysis?

A. The equity risk premium I applied to the Utility Proxy Group is 6.75%, which is the average of the beta-derived and the S&P utility equity risk premiums of 7.63% and 5.86%, respectively.[28]

26 Derived on Line No. 3 of page 3 of Schedule DWD-4.
27 As shown on page 12 of Attachment DWD-4.
28 As shown on page 7 of Schedule DWD-4.

Q. What is the indicated RPM common equity cost rate based on the total market approach?

A. As shown on line No. 7 of Schedule DWD-4, page 3, I calculated a common equity cost rate of 10.44% for the Utility Proxy Group based on the total market approach of the RPM.

Table 6: Summary of the Total Market Return Risk Premium Model[29]

Prospective Moody's A2/A3-Rated Utility Bond Applicable to the Utility Proxy Group	3.69%
Prospective Equity Risk Premium	6.75%
Indicated Cost of Common Equity	10.44%

Q. What are the results of your application of the PRPM and the total market approach RPM?

A. As shown on page 1 of Schedule DWD-4, the indicated RPM-derived common equity cost rate is 10.90%, which gives equal weight to the PRPM (11.35%) and the adjusted market approach results (10.44%).

C. THE CAPITAL ASSET PRICING MODEL

Q. Please explain the theoretical basis of the CAPM.

A. CAPM theory defines risk as the co-variability of a security's returns with the market's returns as measured by the beta coefficient (β). A beta coefficient less than 1.0 indicates lower variability than the market as a whole, while a beta coefficient greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all other risk (*i.e.*, all non-market or unsystematic risk) can be eliminated through diversification. The risk that cannot be eliminated

[29] As shown on page 3 of Attachment DWD-4.

through diversification is called market, or systematic, risk. In addition, the CAPM presumes that investors require compensation only for systematic risk, which is the result of macroeconomic and other events that affect the returns on all assets. The model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market as measured by the beta coefficient. The traditional CAPM model is expressed as:

$$R_s = R_f + \beta(R_m - R_f)$$

Where: R_s = Return rate on the common stock;

R_f = Risk-free rate of return;

R_m = Return rate on the market as a whole; and

β = Adjusted beta coefficient (volatility of the security relative to the market as a whole).

Numerous tests of the CAPM have measured the extent to which security returns and beta coefficients are related as predicted by the CAPM, confirming its validity. The empirical CAPM ("ECAPM") reflects the reality that while the results of these tests support the notion that the beta coefficient is related to security returns, the empirical Security Market Line ("SML") described by the CAPM formula is not as steeply sloped as the predicted SML.[30] The ECAPM reflects this empirical reality. Fama and French clearly state regarding Figure 2, below, that "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low." [31]

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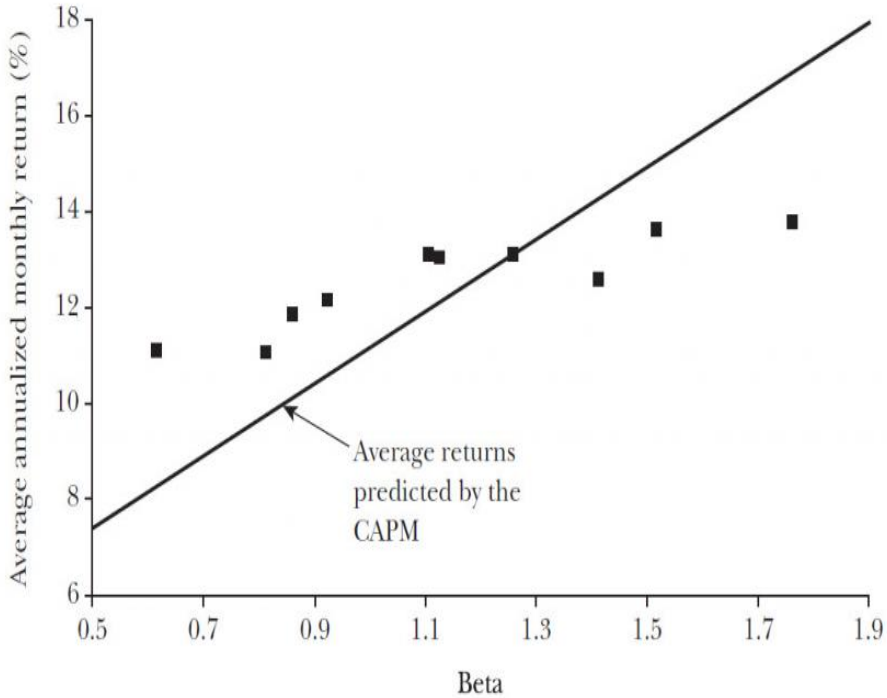
30 Roger A. Morin, PhD, New Regulatory Finance, (Public Utilities Reports, Inc., 2006) at 175.("*Morin*")

31 Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence", *Journal of Economic Perspectives*, Vol. 18, No. 3, Summer 2004 at 33 ("Fama & French"). http://pubs.aeaweb.org/doi/pdfplus/10.1257/0895330042162430.

Figure 2 http://pubs.aeaweb.org/doi/pdfplus/10.1257/0895330042162430

Average Annualized Monthly Return versus Beta for Value Weight Portfolios Formed on Prior Beta, 1928–2003



In addition, Morin observes that while the results of these tests support the notion that beta is related to security returns, the empirical SML described by the CAPM formula is not as steeply sloped as the predicted SML. Morin states:

> With few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.[32]
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,\beta(R_M - R_F) + (1-x)\,\beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. The value of x that best explains the observed relationship [is] Return = 0.0829 +

[32] Morin, at 175.

0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:

$$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$ [33]

Fama and French provide similar support for the ECAPM when they state:

> The early tests firmly reject the Sharpe-Lintner version of the CAPM. There is a positive relation between beta and average return, but it is too 'flat.'… The regressions consistently find that the intercept is greater than the average risk-free rate… and the coefficient on beta is less than the average excess market return… This is true in the early tests… as well as in more recent cross-section regressions tests, like Fama and French (1992).[34]

Finally, Fama and French further note:

> Confirming earlier evidence, the relation between beta and average return for the ten portfolios is much flatter than the Sharpe-Linter CAPM predicts. The returns on low beta portfolios are too high, and the returns on the high beta portfolios are too low. For example, the predicted return on the portfolio with the lowest beta is 8.3 percent per year; the actual return as 11.1 percent. The predicted return on the portfolio with the highest beta is 16.8 percent per year; the actual is 13.7 percent.[35]

Clearly, the justification from Morin, Fama, and French along with their reviews of other academic research on the CAPM, validate the use of the ECAPM. In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the Utility Proxy Group and averaged the results.

Q. What beta coefficients did you use in your CAPM analysis?

A. With respect to the beta coefficient, I considered two methods of calculation: 1) the average of the beta coefficients of the Utility Proxy Group companies reported by Bloomberg Professional Services, and 2) the average of the beta coefficients of

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33 Morin, at 190.
34 Fama & French, at 32.
35 *Ibid.,* at 33.

the Utility Proxy Group companies as reported by *Value Line*. While both of those services adjust their calculated (or "raw") beta coefficients to reflect the tendency of the beta coefficient to regress to the market mean of 1.00, *Value Line* calculates the beta coefficient over a five-year period, while Bloomberg's calculation is based on two years of data.

Q. Please describe your selection of a risk-free rate of return.

A. As shown in Column 5 on page 1 of Schedule DWD-5, the risk-free rate adopted for both applications of the CAPM is 2.48%. This risk-free rate of 2.48% is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the second calendar quarter of 2022, and long-term projections for the years 2022 to 2026 and 2027 to 2031.

Q. Why is the yield on long-term U.S. Treasury bonds appropriate for use as the risk-free rate?

A. The yield on long-term U.S. Treasury Bonds is almost risk-free, and its term is consistent with the long-term cost of capital to public utilities measured by the yields on A2-rated public utility bonds, the long-term investment horizon inherent in utilities' common stocks, and the long-term life of the jurisdictional rate base to which the allowed fair rate of return (*i.e.*, cost of capital) will be applied. In contrast, short-term U.S. Treasury yields are more volatile and largely a function of Federal Reserve monetary policy.

Q. Please explain the estimation of the expected risk premium for the market used in your CAPM analyses.

A. The basis of the market risk premium is explained in detail in note 1 on page 2 of Schedule DWD-5. As discussed previously, the market risk premium is derived from an average of:

(i) Ibbotson-based market risk premiums;

(ii) *Value Line* data-based market risk premiums; and

(iii) Bloomberg data-based market risk premiums.

The long-term income return on U.S. Government Securities of 5.09% was deducted from the SBBI - 2020 monthly historical total market return of 12.10%, which results in an historical market equity risk premium of 7.01%.[36] I applied a linear OLS regression to the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government Securities from SBBI - 2020. That regression analysis yielded a market equity risk premium of 9.81%. The PRPM market equity risk premium is 10.81% and is derived using the PRPM relative to the yields on long-term U.S. Treasury securities from January 1926 through February 2021.

The *Value Line*-derived forecasted total market equity risk premium is derived by deducting the forecasted risk-free rate of 2.48%, discussed above, from the *Value Line* projected total annual market return of 8.75%, resulting in a forecasted total market equity risk premium of 6.27%. The S&P 500 projected market equity risk premium using *Value Line* data is derived by subtracting the

[36] SBBI – 2020, at Appendix A-1 (1) through A-1 (3) and Appendix A-7 (19) through A-7 (21).

projected risk-free rate of 2.48% from the projected total return of the S&P 500 of 14.34%. The resulting market equity risk premium is 11.86%.

The S&P 500 projected market equity risk premium using Bloomberg data is derived by subtracting the projected risk-free rate of 2.48% from the projected total return of the S&P 500 of 16.35%. The resulting market equity risk premium is 13.87%.

These six market risk premiums, when averaged, result in an average total market equity risk premium of 9.94%.

Table 7: Summary of the Calculation of the Market Risk Premium for use in the CAPM[37]

Historical Spread Between Total Returns of Large Stocks and Long-Term Government Bond Yields (1926 – 2020)	7.01%
Regression Analysis on Historical Data	9.81%
PRPM Analysis on Historical Data	10.81%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected 30-Year Treasury Bond Yields	6.27%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected 30-Year Treasury Bond Yields	11.86%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected 30-Year Treasury Bond Yields	13.87%
Average	9.94%

Q. What are the results of your application of the traditional and empirical CAPM to the Utility Proxy Group?

A. As shown on page 1 of Schedule DWD-5, the mean result of my CAPM/ECAPM analysis is 10.79%, the median is 11.29%, and the average of the two is 11.04%.

[37] As shown on page 2 of Schedule DWD-5.

Consistent with my reliance on the average of mean and median DCF results discussed above, the indicated common equity cost rate using the CAPM/ECAPM is 11.04%.

D. COMMON EQUITY COST RATES FOR A PROXY GROUP OF DOMESTIC, NON-PRICE REGULATED COMPANIES BASED ON THE DCF, RPM, AND CAPM

Q. Why did you also consider a proxy group of domestic, non-price regulated companies?

A. In the *Hope* and *Bluefield* cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Since the purpose of rate regulation is to be a substitute for the competition of the marketplace, non-price regulated firms operating in the competitive marketplace make an excellent proxy if they are comparable in total risk to the Utility Proxy Group being used to estimate the cost of common equity. The selection of such domestic, non-price regulated competitive firms theoretically and empirically results in a proxy group which is comparable in total risk to the Utility Proxy Group.

Q. How did you select non-price regulated companies that are comparable in total risk to the Utility Proxy Group?

A. In order to select a proxy group of domestic, non-price regulated companies similar in total risk to the Utility Proxy Group, I relied on the beta coefficients and related statistics derived from *Value Line* regression analyses of weekly market prices over the most recent 260 weeks (*i.e.*, five years). Using these selection criteria resulted in a proxy group of 26 domestic, non-price regulated firms comparable in total risk to the Utility Proxy Group. Total risk is the sum of non-diversifiable market

risk and diversifiable company-specific risks. The criteria used in the selection of the domestic, non-price regulated firms was:

(i) They must be covered by *Value Line Investment Survey* (Standard Edition);

(ii) They must be domestic, non-price regulated companies, *i.e.*, non-utilities;

(iii) Their beta coefficients must lie within plus or minus two standard deviations of the average unadjusted beta coefficient of the Utility Proxy Group; and

(iv) The residual standard errors of the *Value Line* regressions which gave rise to the unadjusted beta coefficients must lie within plus or minus two standard deviations of the average residual standard error of the Utility Proxy Group.

Beta coefficients are a measure of market or systematic risk, which is not diversifiable. The residual standard errors of the regressions were used to measure each firm's company-specific, diversifiable risk. Companies that have similar beta coefficients <u>and</u> similar residual standard errors resulting from the same regression analyses have similar total investment risk.

Q. Have you prepared a schedule which shows the data from which you selected the 26 domestic, non-price regulated companies that are comparable in total risk to the Utility Proxy Group?

A. Yes, the basis of my selection, and both proxy groups' regression statistics, are shown in Schedule DWD-6.

Q. Did you calculate common equity cost rates using the DCF, RPM, and CAPM for the Non-Price Regulated Proxy Group?

A. Yes. Because the DCF, RPM, and CAPM have been applied in an identical manner as described above, I will not repeat the details of the rationale and

application of each model. One exception is in the application of the RPM, where I did not use public utility-specific equity risk premiums, nor did I apply the PRPM to the individual companies.

Page 2 of Schedule DWD-7 contains the derivation of the DCF cost rates. As shown, the indicated common equity cost rate using the DCF for the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group, is 11.05%.

Pages 3 through 5 of DWD-7 contain the data and calculations that support the 11.42% RPM cost rate. As shown on Line No. 1 of page 3 of Schedule DWD-7, the consensus prospective yield on Moody's Baa-rated corporate bonds for the six quarters ending in the second quarter of 2022, and for the years 2022 to 2026 and 2027 to 2031, is 4.11%.[38] Because the Non-Price Regulated Proxy Group has an average Moody's bond rating of Baa1, a downward adjustment of 0.14% to the prospective Baa2-rated bond yield is necessary to reflect the difference in bond ratings.[39] Subtracting 0.14% from the prospective Baa2-rated bond yield of 4.11% is 3.97%.

When the beta-adjusted risk premium of 7.45%[40] relative to the Non-Price Regulated Proxy Group is added to the prospective Baa1-rated corporate bond yield of 3.97%, the indicated RPM cost rate is 11.42%.

Page 6 contains the inputs and calculations that support my indicated CAPM/ECAPM cost rate of 10.82%.

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38 *Blue Chip Financial Forecasts*, December 1, 2020, at p. 14 and March 1, 2021, at p. 2.
39 As demonstrated on Schedule DWD-7, page 3, note 2.
40 Derived on page 5 of Schedule DWD-7.

Q. What is the cost rate of common equity based on the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group?

A. As shown on page 1 of Schedule DWD-7, the results of the DCF, RPM, and CAPM applied to the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group are 11.05%, 11.42%, and 10.82%, respectively. The average of the mean and median of these models is 11.08%, which I used as the indicated common equity cost rate for the Non-Price Regulated Proxy Group.

VIII. CONCLUSION OF COMMON EQUITY COST RATE BEFORE ADJUSTMENT

Q. What is the indicated range of common equity cost rates before adjustment?

A. Based on the results of the application of multiple cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group, the indicated model results are between 8.88% (average of all model results) and 11.08% (maximum of model results).

I used multiple cost of common equity models as primary tools in arriving at my recommended common equity cost rate, because no single model is so inherently precise that it can be relied on solely to the exclusion of other theoretically sound models. The use of multiple models adds reliability to the estimation of the common equity cost rate, and the prudence of using multiple cost of common equity models is supported in both the financial literature and regulatory precedent.

As discussed previously, after determining the indicated range of ROE attributable to a comparable group, there must be an evaluation of relative risk between that group and the target company to determine whether it is appropriate

to apply adjustments to the comparable group's indicated ROE to better reflect the target company's specific risks.

IX. ADJUSTMENT TO THE COMMON EQUITY COST RATE

A. SIZE ADJUSTMENT

Q. Does CUPA's smaller size compared with the Utility Proxy Group increase its business risk?

A. Yes. CUPA's smaller size relative to the Utility Proxy Group companies indicates greater relative business risk for the Company because, all else being equal, size has a material bearing on risk.

Size affects business risk because smaller companies generally are less able to cope with significant events that affect sales, revenues, and earnings. For example, smaller companies face more risk exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few larger customers would have a greater effect on a small company than on a bigger company with a larger, more diverse, customer base.

As further evidence illustrates that smaller firms are riskier, investors generally demand greater returns from smaller firms to compensate for less marketability and liquidity of their securities. Duff & Phelps' 2020 Valuation Handbook – U.S. Guide to Cost of Capital ("D&P - 2020") discusses the nature of the small-size phenomenon, providing an indication of the magnitude of the size premium based on several measures of size. In discussing "Size as a Predictor of Equity Premiums," D&P - 2020 states:

> The size effect is based on the empirical observation that companies of smaller size are associated with greater risk and, therefore, have greater cost of capital [sic]. The "size" of a company is one of the

> most important risk elements to consider when developing cost of equity capital estimates for use in valuing a business simply because size has been shown to be a *predictor* of equity returns. In other words, there is a significant (negative) relationship between size and historical equity returns - as size *decreases*, returns tend to *increase*, and vice versa. (footnote omitted) (emphasis in original)[41]

Furthermore, in "The Capital Asset Pricing Model: Theory and Evidence," Fama and French note size is indeed a risk factor which must be reflected when estimating the cost of common equity. On page 14, they note:

> **. . .** the higher average returns on small stocks and high book-to-market stocks reflect unidentified state variables that produce undiversifiable risks (covariances) in returns not captured in the market return and are priced separately from market betas.[42]

Based on this evidence, Fama and French proposed their three-factor model which includes a size variable in recognition of the effect size has on the cost of common equity.

Also, it is a basic financial principle that the use of funds invested, and not the source of funds, is what gives rise to the risk of any investment.[43] Eugene Brigham, a well-known authority, states:

> A number of researchers have observed that portfolios of small-firms (sic) have earned consistently higher average returns than those of large-firm stocks; this is called the "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; **what the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.** (emphasis added)[44]

Consistent with the financial principle of risk and return discussed above,

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41 Duff & Phelps 2020 Valuation Handbook – U.S. Guide to Cost of Capital, Wiley 2018, at 4-1.
42 Fama & French, at 25-43.
43 Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance (McGraw-Hill Book Company, 1996), at 204-205, 229.
44 Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989), at 623.

increased relative risk due to small size must be considered in the allowed rate of return on common equity. Therefore, the Commission's authorization of a cost rate of common equity in this proceeding must appropriately reflect the unique risks of CUPA, including its small size, which is justified and supported above by evidence in the financial literature.

Q. Should the Commission consider CUPA as a stand-alone company?

A. Yes, it should. Because it is CUPA's rate base to which the overall rates of return set forth in this proceeding will be applied, they should be evaluated as a stand-alone entity. To do otherwise would be discriminatory, confiscatory, and inaccurate. It is also a basic financial precept that the use of the funds invested give rise to the risk of the investment. As Brealey and Myers state:

> The true cost of capital depends on the use to which the capital is put.
>
> ***
>
> *Each project should be evaluated at its own opportunity cost of capital; the true cost of capital depends on the use to which the capital is put*. (italics and bold in original) [45]

Morin confirms Brealey and Myers when he states:

> Financial theory clearly establishes that the cost of equity is the risk-adjusted opportunity cost of the investors and not the cost of the specific capital sources employed by the investors. The true cost of capital depends on the use to which the capital is put and not on its source. The Hope and Bluefield doctrines have made clear that the relevant considerations in calculating a company's cost of capital are the alternatives available to investors and the returns and risks associated with those alternatives.[46]

Additionally, Levy and Sarnat state:

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[45] Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, McGraw-Hill, Third Edition, 1988, at pp. 173, 198.

[46] Morin, at 523.

> The firm's cost of capital is the discount rate employed to discount the firm's average cash flow, hence obtaining the value of the firm. It is also the weighted average cost of capital, as we shall see below. The weighted average cost of capital should be employed for project evaluation… only in cases where the risk profile of the new projects is a "carbon copy" of the risk profile of the firm[47]

Although Levy and Sarnat discuss a project's cost of capital relative to a firm's cost of capital, these principles apply equally to the use of a proxy group-based cost of capital. Each company must be viewed on its own merits, regardless of the source of its equity capital. As *Bluefield* clearly states:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; [48]

In other words, it is the "risks and uncertainties" surrounding the property employed for the "convenience of the public" which determines the appropriate level of rates. In this proceeding, the property employed "for the convenience of the public" is the rate base of CUPA. Thus, it is only the risk of investment in CUPA that is relevant to the determination of the cost of common equity to be applied to the common equity-financed portion of that rate base.

In addition, in the Fama and French article previously cited, the authors[49] proposed that their three-factor model include the SMB (Small Minus Big) factor, which indicates that small capitalization firms are more risky than large capitalization firms, confirming that size is a risk factor which must be taken into

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47 Haim Levy & Marshall Sarnat, Capital Investment and Financial Decisions, Prentice/Hall International, 1986, at 465.

48 *Bluefield*, at 6.

49 Fama & French, at 39.

account in estimating the cost of common equity.

Consistent with the financial principle of risk and return discussed previously, and the stand-alone nature of ratemaking, an upward adjustment must be applied to the indicated cost of common equity derived from the cost of equity models of the proxy groups used in this proceeding.

Q. Is there a way to quantify a relative risk adjustment due to CUPA's small size relative to the Utility Proxy Group?

A. Yes. The Company has greater relative risk than the average company in the Utility Proxy Group because of its smaller size compared with the group, as measured by an estimated market capitalization of common equity for CUPA (whose common stock is not publicly-traded).

Table 8: Size as Measured by Market Capitalization for the Company and the Utility Proxy Group

	Market Capitalization* ($ Millions)	**Times Greater Than the Company**
CUPA	$36.935	
Utility Proxy Group	$6,259.961	169.5x
*From page 1 of Schedule DWD-8.		

The Company's estimated market capitalization was at $36.935 million as of February 26, 2021, compared with the market capitalization of the average water company in the Utility Proxy Group of $6.259 billion as of February 26, 2021. The Utility Proxy Group's market capitalization is 169.5 times the size of CUPA's estimated market capitalization.

As a result, it is necessary to upwardly adjust the indicated range of common equity cost rates to reflect CUPA's greater risk due to its smaller relative

size. The determination is based on the size premiums for portfolios of New York Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked by deciles for the 1926 to 2019 period. The average size premium for the Utility Proxy Group with a market capitalization of $6.259 billion falls in the 4th decile, while CUPA's market capitalization of $36.935 million places the Company in the 10th decile. The size premium spread between the 4th decile and the 10th decile is 4.26%. Even though a 4.26% upward size adjustment is indicated, I apply a size premium of 1.00% to CUPA's indicated range of common equity cost rates.

Q. Since CUPA is a wholly-owned subsidiary of CRU, why is the size of CRU not more appropriate to use when determining the size adjustment?

A. As discussed above, the return derived in this proceeding will not apply to CRU as a whole, but only CUPA. CRU is the sum of its constituent parts, including those constituent parts' returns on common equity. Potential investors in CRU are aware that it is a combination of operations in each state, and that each state's operations experience the operating risks specific to their jurisdiction. The market's expectation of CRU's return is commensurate with the realities of its composite operations in each of the states in which it operates.

Q. What is the indicated range of common equity cost rates after adjustment for CUPA's smaller size relative to the Utility Proxy Group?

After applying the 1.00% size adjustment to the indicated range of common equity cost rates between 8.88% and 11.08%, based on the Utility Proxy Group results, a range of common equity cost rates between 9.88% and 12.08% is applicable to CUPA. From that range, I recommend the Commission approve an ROE of 10.35%.

X. CONCLUSION OF COMMON EQUITY COST RATE

Q. What is your recommended common equity cost rate for CUPA?

Given the actual capital structure ending December 31, 2020 which consists of 52.32% long-term debt at an embedded debt cost rate of 5.05% and 47.68% common equity at my recommended ROE of 10.35%, I conclude that an appropriate return on investor-supplied capital for the Company is 7.58%. A common equity cost rate of 10.35% is consistent with the *Hope* and *Bluefield* standard of a just and reasonable return which ensures the integrity of presently invested capital and enables the attraction of needed new capital on reasonable terms. It also ensures that CUPA will be able to continue providing safe, adequate, and reliable service to the benefit of customers. Thus, it balances the interests of both customers and the Company.

Q. In your opinion, is your proposed common equity cost rate of 10.35% fair and reasonable to CUPA, its shareholders, and its customers?

A. Yes, it is.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Appendix A – D'Ascendis Resume & Testimony Listing

scottmadden
MANAGEMENT CONSULTANTS

Appendix A - Resume & Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Partner

Summary

Dylan is an experienced consultant and a Certified Rate of Return Analyst (CRRA) and Certified Valuation Analyst (CVA). He has served as a consultant for investor-owned and municipal utilities and authorities for 13 years. Dylan has extensive experience in rate of return analyses, class cost of service, rate design, and valuation for regulated public utilities. He has testified as an expert witness in the subjects of rate of return, cost of service, rate design, and valuation before 30 regulatory commissions in the U.S., one Canadian province, and an American Arbitration Association panel.

He also maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured.

Areas of Specialization

- Regulation and Rates
- Utilities
- Mutual Fund Benchmarking
- Capital Market Risk
- Financial Modeling
- Valuation
- Regulatory Strategy
- Rate Case Support
- Rate of Return
- Cost of Service
- Rate Design

Recent Expert Testimony Submission/Appearances

Jurisdiction	***Topic***
Massachusetts Department of Public Utilities	Rate of Return
New Jersey Board of Public Utilities	Rate of Return
Hawaii Public Utilities Commission	Cost of Service, Rate Design
South Carolina Public Service Commission	Return on Common Equity
American Arbitration Association	Valuation

Recent Assignments

- Provided expert testimony on the cost of capital for ratemaking purposes before numerous state utility regulatory agencies
- Maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured
- Sponsored valuation testimony for a large municipal water company in front of an American Arbitration Association Board to justify the reasonability of their lease payments to the City
- Co-authored a valuation report on behalf of a large investor-owned utility company in response to a new state regulation which allowed the appraised value of acquired assets into rate base

Recent Publications and Speeches

- Co-Author of: "Decoupling, Risk Impacts and the Cost of Capital", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. The Electricity Journal, March, 2020.
- Co-Author of: "Decoupling Impact and Public Utility Conservation Investment", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. Energy Policy Journal, 130 (2019), 311-319.
- "Establishing Alternative Proxy Groups", before the Society of Utility and Regulatory Financial Analysts: 51st Financial Forum, April 4, 2019, New Orleans, LA.
- "Past is Prologue: Future Test Year", Presentation before the National Association of Water Companies 2017 Southeast Water Infrastructure Summit, May 2, 2017, Savannah, GA.
- Co-author of: "Comparative Evaluation of the Predictive Risk Premium Model™, the Discounted Cash Flow Model and the Capital Asset Pricing Model", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University, Pauline M. Ahern, and Frank J. Hanley, The Electricity Journal, May, 2013.
- "Decoupling: Impact on the Risk and Cost of Common Equity of Public Utility Stocks", before the Society of Utility and Regulatory Financial Analysts: 45th Financial Forum, April 17-18, 2013, Indianapolis, IN.

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Regulatory Commission of Alaska				
Alaska Power Company	09/20	Alaska Power Company; Goat Lake Hydro, Inc.; BBL Hydro, Inc.	Tariff Nos. TA886-2; TA6-521; TA4-573	Capital Structure
Alaska Power Company	07/16	Alaska Power Company	Docket No. TA857-2	Rate of Return
Alberta Utilities Commission				
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	01/20	AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	2021 Generic Cost of Capital, Proceeding ID. 24110	Rate of Return
Arizona Corporation Commission				
EPCOR Water Arizona, Inc.	06/20	EPCOR Water Arizona, Inc.	Docket No. WS-01303A-20-0177	Rate of Return
Arizona Water Company	12/19	Arizona Water Company – Western Group	Docket No. W-01445A-19-0278	Rate of Return
Arizona Water Company	08/18	Arizona Water Company – Northern Group	Docket No. W-01445A-18-0164	Rate of Return
Colorado Public Utilities Commission				
Summit Utilities, Inc.	04/18	Colorado Natural Gas Company	Docket No. 18AL-0305G	Rate of Return
Atmos Energy Corporation	06/17	Atmos Energy Corporation	Docket No. 17AL-0429G	Rate of Return
Delaware Public Service Commission				
Delmarva Power & Light Co.	11/20	Delmarva Power & Light Co.	Docket No. 20-0149 (Electric)	Return on Equity
Delmarva Power & Light Co.	10/20	Delmarva Power & Light Co.	Docket No. 20-0150 (Gas)	Return on Equity
Tidewater Utilities, Inc.	11/13	Tidewater Utilities, Inc.	Docket No. 13-466	Capital Structure
Public Service Commission of the District of Columbia				
Washington Gas Light Company	09/20	Washington Gas Light Company	Formal Case No. 1162	Rate of Return
Federal Energy Regulatory Commission				
LS Power Grid California, LLC	10/20	LS Power Grid California, LLC	Docket No. ER21-195-000	Rate of Return
Florida Public Service Commission				
Tampa Electric Company	04/21	Tampa Electric Company	Docket No. 20210034-EI	Return on Equity
Peoples Gas System	09/20	Peoples Gas System	Docket No. 20200051-GU	Rate of Return
Utilities, Inc. of Florida	06/20	Utilities, Inc. of Florida	Docket No. 20200139-WS	Rate of Return
Hawaii Public Utilities Commission				
Launiupoko Irrigation Company, Inc.	12/20	Launiupoko Irrigation Company, Inc.	Docket No. 2020-0217 / Transferred to 2020-0089	Capital Structure
Lanai Water Company, Inc.	12/19	Lanai Water Company, Inc.	Docket No. 2019-0386	Cost of Service / Rate Design
Manele Water Resources, LLC	08/19	Manele Water Resources, LLC	Docket No. 2019-0311	Cost of Service / Rate Design
Kaupulehu Water Company	02/18	Kaupulehu Water Company	Docket No. 2016-0363	Rate of Return
Aqua Engineers, LLC	05/17	Puhi Sewer & Water Company	Docket No. 2017-0118	Cost of Service / Rate Design
Hawaii Resources, Inc.	09/16	Laie Water Company	Docket No. 2016-0229	Cost of Service / Rate Design
Illinois Commerce Commission				
Utility Services of Illinois, Inc.	02/21	Utility Services of Illinois, Inc.	Docket No. 21-0198	Rate of Return

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Ameren Illinois Company d/b/a Ameren Illinois	07/20	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 20-0308	Return on Equity
Utility Services of Illinois, Inc.	11/17	Utility Services of Illinois, Inc.	Docket No. 17-1106	Cost of Service / Rate Design
Aqua Illinois, Inc.	04/17	Aqua Illinois, Inc.	Docket No. 17-0259	Rate of Return
Utility Services of Illinois, Inc.	04/15	Utility Services of Illinois, Inc.	Docket No. 14-0741	Rate of Return
Indiana Utility Regulatory Commission				
Aqua Indiana, Inc.	03/16	Aqua Indiana, Inc. Aboite Wastewater Division	Docket No. 44752	Rate of Return
Twin Lakes, Utilities, Inc.	08/13	Twin Lakes, Utilities, Inc.	Docket No. 44388	Rate of Return
Kansas Corporation Commission				
Atmos Energy	07/19	Atmos Energy	19-ATMG-525-RTS	Rate of Return
Kentucky Public Service Commission				
Bluegrass Water Utility Operating Company	10/20	Bluegrass Water Utility Operating Company	2020-00290	Return on Equity
Louisiana Public Service Commission				
Southwestern Electric Power Company	12/20	Southwestern Electric Power Company	Docket No. U-35441	Return on Equity
Atmos Energy	04/20	Atmos Energy	Docket No. U-35535	Rate of Return
Louisiana Water Service, Inc.	06/13	Louisiana Water Service, Inc.	Docket No. U-32848	Rate of Return
Maryland Public Service Commission				
Washington Gas Light Company	08/20	Washington Gas Light Company	Case No. 9651	Rate of Return
FirstEnergy, Inc.	08/18	Potomac Edison Company	Case No. 9490	Rate of Return
Massachusetts Department of Public Utilities				
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Elec.)	D.P.U. 19-130	Rate of Return
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Gas)	D.P.U. 19-131	Rate of Return
Liberty Utilities	07/15	Liberty Utilities d/b/a New England Natural Gas Company	Docket No. 15-75	Rate of Return
Minnesota Public Utilities Commission				
Northern States Power Company	11/20	Northern States Power Company	Docket No. E002/GR-20-723	Rate of Return
Mississippi Public Service Commission				
Atmos Energy	03/19	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Atmos Energy	07/18	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Missouri Public Service Commission				
Spire Missouri, Inc.	12/20	Spire Missouri, Inc.	Case No. GR-2021-0108	Return on Equity
Indian Hills Utility Operating Company, Inc.	10/17	Indian Hills Utility Operating Company, Inc.	Case No. SR-2017-0259	Rate of Return
Raccoon Creek Utility Operating Company, Inc.	09/16	Raccoon Creek Utility Operating Company, Inc.	Docket No. SR-2016-0202	Rate of Return
Public Utilities Commission of Nevada				
Southwest Gas Corporation	08/20	Southwest Gas Corporation	Docket No. 20-02023	Return on Equity
New Hampshire Public Utilities Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Aquarion Water Company of New Hampshire, Inc.	12/20	Aquarion Water Company of New Hampshire, Inc.	Docket No. DW 20-184	Rate of Return
New Jersey Board of Public Utilities				
Atlantic City Electric Company	12/20	Atlantic City Electric Company	Docket No. ER20120746	Return on Equity
FirstEnergy	02/20	Jersey Central Power & Light Co.	Docket No. ER20020146	Rate of Return
Aqua New Jersey, Inc.	12/18	Aqua New Jersey, Inc.	Docket No. WR18121351	Rate of Return
Middlesex Water Company	10/17	Middlesex Water Company	Docket No. WR17101049	Rate of Return
Middlesex Water Company	03/15	Middlesex Water Company	Docket No. WR15030391	Rate of Return
The Atlantic City Sewerage Company	10/14	The Atlantic City Sewerage Company	Docket No. WR14101263	Cost of Service / Rate Design
Middlesex Water Company	11/13	Middlesex Water Company	Docket No. WR1311059	Capital Structure
New Mexico Public Regulation Commission				
Southwestern Public Service Company	01/21	Southwestern Public Service Company	Case No. 20-00238-UT	Return on Equity
North Carolina Utilities Commission				
Piedmont Natural Gas Co.Inc.	03/21	Piedmont Natural Gas Co., Inc.	Docket No. G-9, Sub 781	Return on Equity
Duke Energy Carolinas, LLC	07/20	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1214	Return on Equity
Duke Energy Progress, LLC	07/20	Duke Energy Progress, LLC	Docket No. E-2, Sub 1219	Return on Equity
Aqua North Carolina, Inc.	12/19	Aqua North Carolina, Inc.	Docket No. W-218 Sub 526	Rate of Return
Carolina Water Service, Inc.	06/19	Carolina Water Service, Inc.	Docket No. W-354 Sub 364	Rate of Return
Carolina Water Service, Inc.	09/18	Carolina Water Service, Inc.	Docket No. W-354 Sub 360	Rate of Return
Aqua North Carolina, Inc.	07/18	Aqua North Carolina, Inc.	Docket No. W-218 Sub 497	Rate of Return
North Dakota Public Service Commission				
Northern States Power Company	11/20	Northern States Power Company	Case No. PU-20-441	Rate of Return
Public Utilities Commission of Ohio				
Aqua Ohio, Inc.	05/16	Aqua Ohio, Inc.	Docket No. 16-0907-WW-AIR	Rate of Return
Pennsylvania Public Utility Commission				
Valley Energy, Inc.	07/19	C&T Enterprises	Docket No. R-2019-3008209	Rate of Return
Wellsboro Electric Company	07/19	C&T Enterprises	Docket No. R-2019-3008208	Rate of Return
Citizens' Electric Company of Lewisburg	07/19	C&T Enterprises	Docket No. R-2019-3008212	Rate of Return
Steelton Borough Authority	01/19	Steelton Borough Authority	Docket No. A-2019-3006880	Valuation
Mahoning Township, PA	08/18	Mahoning Township, PA	Docket No. A-2018-3003519	Valuation
SUEZ Water Pennsylvania Inc.	04/18	SUEZ Water Pennsylvania Inc.	Docket No. R-2018-000834	Rate of Return
Columbia Water Company	09/17	Columbia Water Company	Docket No. R-2017-2598203	Rate of Return
Veolia Energy Philadelphia, Inc.	06/17	Veolia Energy Philadelphia, Inc.	Docket No. R-2017-2593142	Rate of Return
Emporium Water Company	07/14	Emporium Water Company	Docket No. R-2014-2402324	Rate of Return
Columbia Water Company	07/13	Columbia Water Company	Docket No. R-2013-2360798	Rate of Return
Penn Estates Utilities, Inc.	12/11	Penn Estates, Utilities, Inc.	Docket No. R-2011-2255159	Capital Structure / Long-Term Debt Cost Rate

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
South Carolina Public Service Commission				
Blue Granite Water Co.	12/19	Blue Granite Water Company	Docket No. 2019-292-WS	Rate of Return
Carolina Water Service, Inc.	02/18	Carolina Water Service, Inc.	Docket No. 2017-292-WS	Rate of Return
Carolina Water Service, Inc.	06/15	Carolina Water Service, Inc.	Docket No. 2015-199-WS	Rate of Return
Carolina Water Service, Inc.	11/13	Carolina Water Service, Inc.	Docket No. 2013-275-WS	Rate of Return
United Utility Companies, Inc.	09/13	United Utility Companies, Inc.	Docket No. 2013-199-WS	Rate of Return
Utility Services of South Carolina, Inc.	09/13	Utility Services of South Carolina, Inc.	Docket No. 2013-201-WS	Rate of Return
Tega Cay Water Services, Inc.	11/12	Tega Cay Water Services, Inc.	Docket No. 2012-177-WS	Capital Structure
Tennessee Public Utility Commission				
Piedmont Natural Gas Company	07/20	Piedmont Natural Gas Company	Docket No. 20-00086	Return on Equity
Public Utility Commission of Texas				
Southwestern Public Service Company	02/21	Southwestern Public Service Company	Docket No. 51802	Return on Equity
Southwestern Electric Power Company	10/20	Southwestern Electric Power Company	Docket No. 51415	Rate of Return
Virginia State Corporation Commission				
Virginia Natural Gas, Inc.	04/21	Virginia Natural Gas, Inc.	PUR-2020-00095	Return on Equity
Massanutten Public Service Corporation	12/20	Massanutten Public Service Corporation	PUE-2020-00039	Return on Equity
Aqua Virginia, Inc.	07/20	Aqua Virginia, Inc.	PUR-2020-00106	Rate of Return
WGL Holdings, Inc.	07/18	Washington Gas Light Company	PUR-2018-00080	Rate of Return
Atmos Energy Corporation	05/18	Atmos Energy Corporation	PUR-2018-00014	Rate of Return
Aqua Virginia, Inc.	07/17	Aqua Virginia, Inc.	PUR-2017-00082	Rate of Return
Massanutten Public Service Corp.	08/14	Massanutten Public Service Corp.	PUE-2014-00035	Rate of Return / Rate Design

CUPA Exhibit DWD

Community Utilities of Pennsylvania, Inc.
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Dylan W. D'Ascendis, CRRA, CVA

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Community Utilities of Pennsylvania, Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at December 31, 2020

Type Of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	(1)	2.64%
Common Equity	47.68%	10.35%	(2)	4.94%
Total	100.00%			7.58%

Notes:

(1) Company-provided.
(2) From page 2 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Seven Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	8.88%
2.	Risk Premium Model (RPM) (2)	10.90%
3.	Capital Asset Pricing Model (CAPM) (3)	11.04%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	11.08%
5.	Indicated Range of Common Equity Cost Rates before Adjustment for Unique Risk	8.88% - 11.08%
6.	Business Risk Adjustment (5)	1.00%
7.	Indicated Range of Common Equity Cost Rates after Adjustment	9.88% - 12.08%
8.	Recommended Common Equity Cost Rate	10.35%

Notes:
(1) From Schedule DWD-3.
(2) From page 1 of Schedule DWD-4.
(3) From page 1 of Schedule DWD-5.
(4) From page 1 of Schedule DWD-7.
(5) Business risk adjustment to reflect CUPA's unique risk compared to the Utility Proxy Group as detailed in the accompanying direct testimony.

Proxy Group of Seven Water Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2015 - 2019, Inclusive

	2019	2018	2017	2016	2015	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
Capitalization Statistics						
Amount of Capital Employed						
Total Permanent Capital	$3,888.223	$3,208.636	$2,837.657	$2,680.018	$2,535.795	
Short-Term Debt	$189.862	$184.221	$185.250	$152.691	$106.277	
Total Capital Employed	$4,078.085	$3,392.857	$3,022.907	$2,832.709	$2,642.072	
Indicated Average Capital Cost Rates (2)						
Total Debt	4.30 %	4.75 %	4.83 %	4.94 %	5.08 %	
Preferred Stock	5.84 %	5.92 %	5.91 %	5.91 %	5.91 %	
Capital Structure Ratios						
Based on Total Permanent Capital:						
Long-Term Debt	47.17 %	45.15 %	45.58 %	46.14 %	46.49 %	46.11 %
Preferred Stock	0.06	0.09	0.10	0.11	0.11	0.09
Common Eqity	52.77	54.76	54.32	53.75	53.40	53.80
Total	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Based on Total Capital:						
Total Debt, Including Short-Term Debt	50.61 %	48.37 %	48.93 %	48.42 %	47.77 %	48.82 %
Preferred Stock	0.06	0.08	0.09	0.10	0.11	0.09
Common Equity	49.34	51.54	50.98	51.47	52.12	51.09
Total	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Financial Statistics						
Financial Ratios - Market Based						
Earnings / Price Ratio	2.67 %	6.31 %	7.91 %	3.97 %	4.59 %	5.09 %
Market / Average Book Ratio	340.26	289.89	288.75	280.21	229.70	285.76
Dividend Yield	1.77	3.74	3.69	2.15	2.62	2.79
Dividend Payout Ratio	72.32	60.08	55.80	56.03	57.45	60.34
Rate of Return on Average Book Common Equity	9.49 %	10.12 %	11.31 %	10.93 %	10.39 %	10.45 %
Total Debt / EBITDA (3)	5.54 x	4.22 x	3.42 x	3.41 x	3.42 x	4.00 x
Funds from Operations / Total Debt (4)	14.49 %	21.37 %	22.87 %	23.65 %	25.81 %	21.64 %
Total Debt / Total Capital	50.61 %	48.37 %	48.93 %	48.42 %	47.77 %	48.82 %

Notes:
(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.
(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.
(3) Total debt relative to EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization).
(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of total debt.

Source of Information: Company Annual Forms 10-K

Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Seven Water Companies
2015 - 2019, Inclusive

	2019	2018	2017	2016	2015	5 YEAR AVERAGE
American States Water Company						
Long-Term Debt	31.87 %	36.54 %	37.75 %	39.40 %	41.15 %	37.34 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	68.13	63.46	62.25	60.60	58.85	62.66
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American Water Works Company, Inc.						
Long-Term Debt	58.59 %	56.55 %	55.81 %	54.74 %	53.89 %	55.92 %
Preferred Stock	0.03	0.05	0.07	0.09	0.11	0.07
Common Equity	41.38	43.40	44.12	45.17	46.00	44.01
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	50.90 %	52.74 %	43.40 %	45.83 %	44.69 %	47.51 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	49.10	47.26	56.60	54.17	55.31	52.49
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Essential Utilities, Inc.						
Long-Term Debt	44.23 %	56.06 %	52.26 %	50.81 %	50.76 %	50.82 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	55.77	43.94	47.74	49.19	49.24	49.18
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	42.20 %	38.94 %	38.65 %	38.91 %	40.44 %	39.83 %
Preferred Stock	0.37	0.59	0.64	0.67	0.69	0.59
Common Equity	57.43	60.47	60.71	60.42	58.87	59.58
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
SJW Group						
Long-Term Debt	59.47 %	32.67 %	48.20 %	50.69 %	50.03 %	48.21 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	40.53	67.33	51.80	49.31	49.97	51.79
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	42.95 %	42.52 %	43.02 %	42.60 %	44.46 %	43.11 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	57.05	57.48	56.98	57.40	55.54	56.89
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Seven Water Companies						
Long-Term Debt	47.17 %	45.15 %	45.58 %	46.14 %	46.49 %	46.11 %
Preferred Stock	0.06	0.09	0.10	0.11	0.11	0.09
Common Equity	52.77	54.76	54.32	53.75	53.40	53.80
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information
Annual Forms 10-K

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Seven Water Companies

Proxy Group of Seven Water Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Yahoo! Finance Projected Five Year Growth in EPS	[5] Bloomberg Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth in EPS (3)	[7] Adjusted Dividend Yield (4)	[8] Indicated Common Equity Cost Rate (5)
American States Water Company	1.71 %	6.50 %	4.90 %	4.85 %	6.00 %	5.56 %	1.76 %	7.32 %
American Water Works Company, Inc.	1.42	8.50	8.10	8.40	NA	8.33	1.48	9.81
California Water Service Group	1.68	8.00	NA	10.75	9.00	9.25	1.76	11.01
Essential Utilities, Inc.	2.15	7.00	6.30	6.40	6.84	6.63	2.22	8.85
Middlesex Water Company	1.47	7.00	NA	2.70	NA	4.85	1.51	6.36
SJW Group	2.01	10.50	14.00	5.50	7.00	9.25	2.10	11.35
York Water Company	1.64	7.00	NA	4.90	NA	5.95	1.69	7.64
							Average	8.90 %
							Median	8.85 %
							Average of Mean and Median	8.88 %

NA= Not Available

Notes:

(1) Indicated dividend at 02/26/2021 divided by the average closing price of the last 60 trading days ending 02/26/2021 for each company.

(2) From pages 2 through 8 of this Schedule.

(3) Average of columns 2 through 4 excluding negative growth rates.

(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Company, 1.71% x (1+(1/2 x 5.56%)) = 1.76%.

(5) Column 6 + Column 7.

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 02/26/2021
www.yahoo.com Downloaded on 02/26/2021
Bloomberg Professional Services

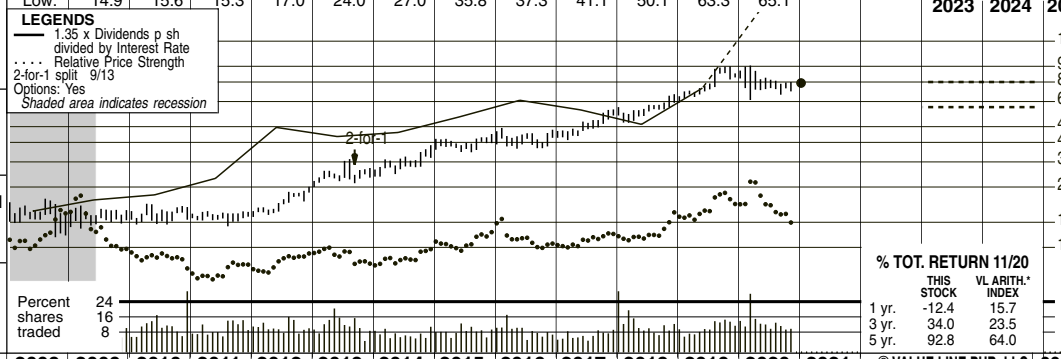
AMER. STATES WATER NYSE-AWR

RECENT PRICE 79.15 | P/E RATIO 34.0 (Trailing: 35.3 Median: 22.0) | RELATIVE P/E RATIO 1.60 | DIV'D YLD 1.8% | VALUE LINE

TIMELINESS 4 Lowered 12/11/20
SAFETY 2 Raised 7/20/12
TECHNICAL 4 Lowered 12/25/20
BETA .65 (1.00 = Market)

High:	19.4	19.8	18.2	24.1	33.1	38.7	44.1	47.2	58.4	69.6	96.0	96.6
Low:	14.9	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1	63.3	65.1

Target Price Range 2023 | 2024 | 2025



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$65-$124	$95 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	80	(Nil)	3%
Low	60	(-25%)	-4%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	125	135	121
to Sell	166	129	135
Hld's(000)	26162	25635	25731

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-12.4	15.7
3 yr.	34.0	23.5
5 yr.	92.8	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	*12.95*	*13.40*	Revenues per sh	*16.40*
1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	*3.25*	*3.50*	"Cash Flow" per sh	*4.50*
.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	*2.25*	*2.40*	Earnings per sh A	*2.90*
.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	*1.28*	*1.40*	Div'd Decl'd per sh B■	*1.85*
2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	*3.40*	*3.60*	Cap'l Spending per sh	*3.75*
7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	*17.30*	*18.50*	Book Value per sh D	*21.35*
33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	*37.00*	*37.25*	Common Shs Outst'g C	*37.50*
23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	*35.5*		Avg Ann'l P/E Ratio	*23.5*
1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.87	*1.79*		Relative P/E Ratio	*1.30*
3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	*1.6%*		Avg Ann'l Div'd Yield	*2.6%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $440.7 mill. **Due in 5 Yrs** $6.9 mill.
LT Debt $440.3 mill. **LT Interest** $25.0 mill.
(41% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.7 mill.
Pension Assets-12/19 $192.5 mill.
Oblig. $231.9 mill.
Pfd Stock None

Common Stock 36,889,061 shs.
as of 10/30/20

MARKET CAP: $2.9 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
398.9	419.3	466.9	472.1	465.8	458.6	436.1	440.6	436.8	473.9	*480*	*500*	Revenues ($mill)	*615*
41.4	42.0	54.1	62.7	61.1	60.5	59.7	69.4	63.9	84.3	*83.0*	*89.0*	Net Profit ($mill)	*110*
43.2%	41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	*25.0%*	*23.0%*	Income Tax Rate	*23.0%*
5.8%	2.0%	2.5%	- -	- -	- -	- -	- -	2.5%	- -	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
44.3%	45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	*41.0%*	*41.5%*	Long-Term Debt Ratio	*49.5%*
55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	*49.0%*	*48.5%*	Common Equity Ratio	*51.5%*
677.4	749.1	787.0	818.4	832.6	791.5	815.3	854.9	938.4	1082.5	*1085*	*1180*	Total Capital ($mill)	*1565*
855.0	896.5	917.8	981.5	1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	*1495*	*1575*	Net Plant ($mill)	*1780*
7.6%	7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	*9.0%*	*8.5%*	Return on Total Cap'l	*8.5%*
11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	*13.0%*	*13.0%*	Return on Shr. Equity	*14.0%*
11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	*13.0%*	*13.0%*	Return on Com Equity	*14.0%*
5.8%	5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	*6.0%*	*5.5%*	Retained to Com Eq	*5.0%*
47%	49%	45%	47%	53%	54%	56%	52%	61%	51%	*57%*	*58%*	All Div'ds to Net Prof	*64%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	7.1	1.3	8.1
Accts Receivable	23.4	20.9	33.7
Other	101.0	100.3	97.6
Current Assets	131.5	122.5	139.4
Accts Payable	59.5	55.6	53.6
Debt Due	40.3	5.3	.4
Other	46.8	55.1	59.5
Current Liab.	146.6	116.0	113.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	- -	*5.0%*
"Cash Flow"	6.0%	3.0%	*7.0%*
Earnings	9.5%	5.0%	*6.5%*
Dividends	8.0%	7.5%	*9.5%*
Book Value	5.5%	4.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	98.8	113.2	124.4	104.2	440.6
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.7	134.5	113.0	473.9
2020	109.1	121.3	133.7	*115.9*	*480*
2021	*110*	*125*	*145*	*120*	*500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.34	.62	.57	.35	1.88
2018	.29	.44	.62	.37	1.72
2019	.35	.72	.76	.45	2.28
2020	.38	.69	.72	*.46*	*2.25*
2021	*.43*	*.72*	*.75*	*.50*	*2.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.242	.242	.255	.255	.99
2018	.255	.255	.275	.275	1.06
2019	.275	.275	.305	.305	1.16
2020	.305	.305	.335	.335	
2021					

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 260,708 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,420 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 841. BlackRock, Inc. owns 15.9% of out. shares; Vanguard, 11.9%; off. & dir. 1.0%. (4/20 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water probably turned in flattish results in 2020. In the key water segment, higher rates implemented retroactively in 2019 caused a reduction in administrative costs that wasn't replicated last year. A higher effective tax rate and an increase in other operating expenses also contributed to a weaker showing. Nonregulated operations also likely posted a negative comparison due to a decrease in construction activity on military bases. An improved performance from the electric business was not enough to offset these negatives. All told, for the full year, the company's share net likely declined about $0.03, to $2.25.

We look for earnings to get back on track this year, however. This is based on our expectations that the company's expense ratios revert to normal levels. The nonregulated businesses should also do much better, as more military bases in the United States are privatized (more below). In sum, share earnings could well advance a healthy 7%, to $2.40.

A new application for rates should not be ruled upon for some time. As per California procedure, Golden States Water filed a general rate case last year seeking higher tariffs for the years 2022-2024. A final decision by state authorities is not expected until very late this year. The outcome will have a major impact on the utility's profits for this three-year period. We are assuming a reasonable decision in our projections, as relations with the state regulators have generally been constructive.

Nonregulated business should provide an earnings boost. American States' contract service operations ought to make inroads in this market as, more domestic military installations conduct bidding processes to have outside companies provide water to these bases. Returns in this sector are higher than the regulated businesses. The company has already proven itself in this area, as it has won a number of these 50-year contracts.

These shares do not stand out at this time. AWR is ranked to underperform the market averages in the year ahead. Furthermore, long-term prospects are not bright either, as the equity is currently trading near the high end of our 2023-2025 Target Price Range.

James A. Flood *January 8, 2021*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due mid-February.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 9/30/20; $1.1 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	85

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AMERICAN WATER NYSE-AWK

RECENT PRICE 149.65 | P/E RATIO 37.1 (Trailing: 41.0 Median: 22.0) | RELATIVE P/E RATIO 1.74 | DIV'D YLD 1.6% | VALUE LINE

TIMELINESS 2 Lowered 11/13/20
SAFETY 3 New 7/25/08
TECHNICAL 2 Lowered 1/8/21
BETA .85 (1.00 = Market)

High:	23.0	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	98.2	129.9	172.6
Low:	16.2	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0	88.0	92.0

18-Month Target Price Range

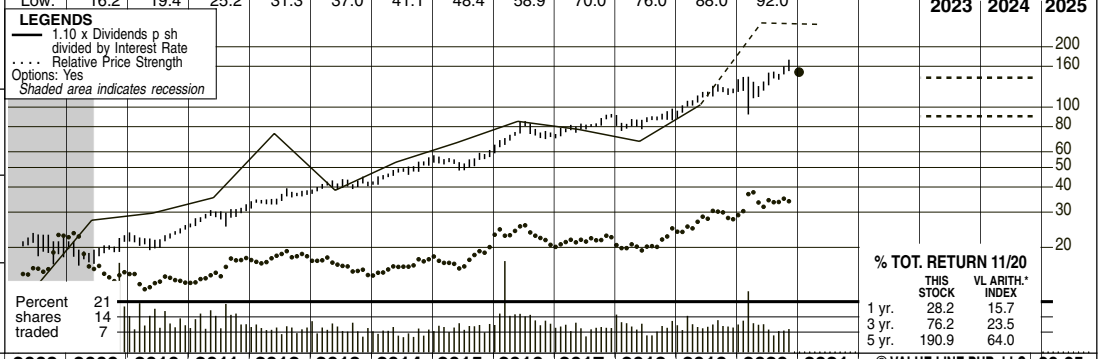
Low-High	Midpoint (% to Mid)
$109-$244	$177 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	140	(-5%)	*Nil*
Low	90	(-40%)	*-9%*

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	333	363	401
to Sell	415	371	337
Hld's(000)	151948	151102	150689



% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	28.2	15.7
3 yr.	76.2	23.5
5 yr.	190.9	64.0

2004	2005	2006E	2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
- -	- -	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	*20.95*	*22.00*	Revenues per sh	*24.75*
- -	- -	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	*7.25*	*7.90*	"Cash Flow" per sh	*8.75*
- -	- -	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	3.43	*3.90*	*4.25*	Earnings per sh A	*4.90*
- -	- -	- -	- -	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	*2.15*	*2.35*	Div'd Decl'd per sh B■	*2.90*
- -	- -	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	*10.50*	*9.20*	Cap'l Spending per sh	*9.00*
- -	- -	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	*36.10*	*37.90*	Book Value per sh D	*42.50*
- -	- -	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	*181.50*	*182.00*	Common Shs Outst'g C	*189.00*
- -	- -	- -	- -	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	*35.3*		Avg Ann'l P/E Ratio	*23.5*
- -	- -	- -	- -	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.79	*1.78*		Relative P/E Ratio	*1.30*
- -	- -	- -	- -	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	*1.6%*		Avg Ann'l Div'd Yield	*2.5%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $10691 mil. **Due in 5 Yrs** $2500 mil.
LT Debt $9580 mil. **LT Interest** $354 mil.
(60% of Cap'l)

Leases, Uncapitalized: Annual rentals $14.0 mill.
Pension Assets12/19 $1747.0 mill
Oblig. $2161.0 mill.
Pfd Stock $4.0 mill. **Pfd Div'd** $.3 mill

Common Stock 181,271,995 shares
as of 10/28/20

MARKET CAP: $27.1 billion (Large Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
2710.7	2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	*3800*	*4000*	Revenues ($mill)	*4675*
267.8	304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0	621.0	*708*	*775*	Net Profit ($mill)	*925*
40.4%	39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	*21.5%*	*21.5%*	Income Tax Rate	*21.0%*
- -	- -	6.2%	5.1%	- -	- -	- -	- -	5.1%	4.0%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
56.8%	55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	*59.5%*	*60.0%*	Long-Term Debt Ratio	*59.0%*
43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	*40.5%*	*40.0%*	Common Equity Ratio	*41.0%*
9561.3	9580.3	9635.5	9940.7	10364	10911	10967	11875	13433	14760	*16150*	*17200*	Total Capital ($mill)	*20000*
11059	11021	11739	12391	12900	13933	14992	16246	17409	18232	*19250*	*20250*	Net Plant ($mill)	*22200*
4.4%	4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	*6.5%*	*5.5%*	Return on Total Cap'l	*6.0%*
6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	*11.0%*	*11.0%*	Return on Shr. Equity	*11.5%*
6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	*11.0%*	*11.5%*	Return on Com Equity	*11.5%*
2.8%	3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	*5.0%*	*4.5%*	Retained to Com Eq	*4.5%*
56%	52%	57%	40%	50%	50%	56%	68%	56%	57%	*55%*	*55%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	158	91	599
Accts Receivable	301	294	358
Other	322	900	1010
Current Assets	781	1285	1967
Accts Payable	175	203	162
Debt Due	1035	814	1111
Other	884	1028	987
Current Liab.	2094	2045	2260

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	3.0%	*4.5%*
"Cash Flow"	13.0%	6.0%	*6.5%*
Earnings	45.5%	6.5%	*8.5%*
Dividends	16.0%	10.5%	*8.5%*
Book Value	2.5%	4.0%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	756	844	936	821	3357
2018	761	853	976	850	3440
2019	813	882	1013	902	3610
2020	844	931	1079	*946*	*3800*
2021	*885*	*970*	*1145*	*1000*	*4000*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.52	.73	1.12	.01	2.38
2018	.59	.91	1.03	.62	3.15
2019	.62	.94	1.33	.54	3.43
2020	.68	.97	1.46	*.79*	*3.90*
2021	*.73*	*1.05*	*1.60*	*.87*	*4.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.375	.415	.415	.415	1.62
2018	.415	.455	.455	.455	1.78
2019	.455	.50	.50	.50	1.96
2020	.50	.55	.55	.55	
2021					

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to approximately 15 million people in 46 states. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86% of 2019 revenues. New Jersey is its largest market accounting for 24.6% of regulated revenues; Pennsylvania, 22.3%; Missouri, 10.5%. Has 6,800 employees. The Vanguard Grp, owns 12.4% of outstanding shares; BlackRock, Inc., 8.7%; officers & directors, less than 1.0%. (3/20 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works probably completed another strong year. In 2020, we think the water utility posted solid earnings growth for the third-consecutive year. Indeed, we estimate that its share net rose nearly 14% to $3.90. Much of this can be attributed to the demand for water by residential customers not being impacted much by the state of the economy.

The positive profit trend should continue this year. Through the bottom-line gain will likely not match last year's rate, American Water should still see a solid 9% increase in earnings per share.

Acquisitions should remain a key part of the growth strategy. The utility has been purchasing many smaller municipally run water districts for years. Many of these entities are extremely inefficient and lack the financial wherewithal to replace their aging pipelines. American Water has a proven track record of absorbing new assets and streamlining costs, all while improving service. It's likely because of these two factors that regulators have treated the company so constructively.

The construction budget is enormous, but manageable. Management targeted $1.9 billion to refurbish and expand its existing water infrastructure in 2019. What's more, the cost of continuing the program should average about $2 billion annually over the next decade. Internally generated funds should cover a good deal of the funds needed, but the company has been issuing bonds to finance the difference. Indeed, its long-term debt-to-total capital ratio has reached the 60% mark. New equity issuance has been very restrained, and shares outstanding have increased only around 4% over the past 11 years. As the equity has performed well over that time span, management may want to consider selling new stock as a way of improving its finances.

The dividend ought to be hiked later this year. At the next meeting in February, we expect the quarterly payout to be raised 9.3%, or $0.05 per share, to $0.60. Moreover, this healthy rate of growth is probably sustainable through mid-decade.

These shares remain timely. However, like most in the water utility group, total return prospects through 2023-2025 are well below the *Value Line* median.

James A. Flood *January 8, 2021*

(A) Diluted earnings. Excludes nonrecur. losses: '08, $4.62; '09, $2.63; '11, $0.07. Disc. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due mid-February
(B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available.
(C) In millions. (D) Includes intangibles. On 9/30/20: $1.562 billion, $8.62/share.
(E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	85

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CALIFORNIA WATER NYSE-CWT

RECENT PRICE **54.21** | P/E RATIO **19.1** (Trailing: 29.0 Median: 23.0) | RELATIVE P/E RATIO **0.90** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 2 Raised 11/20/20
SAFETY 3 Lowered 7/27/07
TECHNICAL 4 Lowered 1/8/21
BETA .65 (1.00 = Market)

High:	24.1	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	57.4
Low:	16.7	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6	39.7

Target Price Range 2023 | 2024 | 2025

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 6/11
Options: Yes
Shaded area indicates recession

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$42-$79	$61 (10%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+10%)	5%
Low	40	(-25%)	-5%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	104	109	101
to Sell	118	107	106
Hld's(000)	35792	35580	36492

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-2.4	15.7
3 yr.	13.8	23.5
5 yr.	140.5	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	14.72	*16.00*	*16.00*	Revenues per sh	*16.05*
1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	3.14	*3.60*	*3.45*	"Cash Flow" per sh	*3.65*
.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	*2.00*	*1.90*	Earnings per sh A	*2.15*
.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	*.85*	*.89*	Div'd Decl'd per sh B ■	*1.05*
1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	5.64	*4.85*	*4.75*	Cap'l Spending per sh	*4.25*
7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	15.19	16.07	*18.00*	*18.15*	Book Value per sh C	*19.35*
36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	*50.00*	*51.00*	Common Shs Outst'g D	*53.00*
20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	39.3	*24.5*		Avg Ann'l P/E Ratio	*23.0*
1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64	2.13	*1.24*		Relative P/E Ratio	*1.30*
3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%	1.5%	*1.7%*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $1182.1 mill. **Due in 5 Yrs** $357.0 mill.
LT Debt $785.1 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 11.2x) (50% of Cap'l)

Pension Assets-12/19 $573.6 mill.
Oblig. $812.0 mill.

Pfd Stock None

Common Stock 49,840,000 shs.

MARKET CAP: $2.7 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
460.4	501.8	560.0	584.1	597.5	588.4	609.4	666.9	698.2	714.6	*800*	*815*	Revenues ($mill) E	*850*
37.7	36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	63.1	*100*	*97.0*	Net Profit ($mill)	*115*
39.5%	40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
4.2%	7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
52.4%	51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	*45.5%*	*44.0%*	Long-Term Debt Ratio	*39.0%*
47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	*54.5%*	*56.0%*	Common Equity Ratio	*61.0%*
914.7	931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	*1650*	*1650*	Total Capital ($mill)	*1675*
1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	*2550*	*2575*	Net Plant ($mill)	*2700*
5.5%	5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	*7.0%*	*6.5%*	Return on Total Cap'l	*7.5%*
8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	*11.0%*	*10.5%*	Return on Shr. Equity	*11.0%*
8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	*11.0%*	*10.5%*	Return on Com Equity	*11.0%*
3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	*6.5%*	*5.5%*	Retained to Com Eq	*5.5%*
66%	71%	62%	56%	55%	71%	68%	51%	55%	60%	*43%*	*47%*	All Div'ds to Net Prof	*49%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	47.2	42.7	113.3
Other	141.5	142.0	192.5
Current Assets	188.7	184.7	305.8
Accts Payable	95.6	108.5	127.2
Debt Due	170.0	197.0	397.0
Other	55.6	53.2	79.6
Current Liab.	321.2	358.7	603.8

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 489,600 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '19: residential, 67%; business, 20%; industrial, 5%; public authorities, 5%; other 3%. Off. and dir. own 1% of common stock (4/20 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	4.0%	2.5%	*2.0%*
"Cash Flow"	5.5%	5.5%	*3.0%*
Earnings	4.5%	4.5%	*8.0%*
Dividends	2.5%	3.5%	*5.5%*
Book Value	4.5%	4.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.)E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	122.1	171.1	211.7	162.0	666.9
2018	134.6	174.9	221.3	167.4	698.2
2019	126.1	179.0	232.6	176.9	714.6
2020	125.6	175.5	304.1	*194.8*	*800*
2021	*155*	*205*	*255*	*200*	*815*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.02	.39	.70	.29	1.40
2018	d.02	.31	.75	.32	1.36
2019	d.16	.35	.88	.24	1.31
2020	d.42	.11	1.94	*.37*	*2.00*
2021	*.08*	*.45*	*.95*	*.42*	*1.90*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.18	.18	.18	.18	.72
2018	.1875	.1875	.1875	.1875	.75
2019	.1975	.1975	.1975	.1975	.79
2020	.2125	.2125	.2125	.2125	
2021					

California Water Service Group's 2018 general rate case has officially been approved. The California Public Utilities Commission (CPUC) has fully adopted the proposal. Specifically, subsequent to CPUC giving California Water the nod, the company is now authorized to invest more than $825 million through 2021 for various infrastructure upgrades, such as improvements to its water distribution system, treatment facilities, and piping systems. Because of this development, California Water's third-quarter financial results reflect the application and recording of certain assets and revenues recovered under the new rate decision. Moreover, the company has been approved to boost revenues by increasing customer rates beginning this year through 2022.

All things considered, our financial projections are being raised across the board. For 2020, the company likely generated share profits of $2.00 (up from our previous call of $0.85) from revenues of $800 million (up from $730 million). Modest top-line growth is probably in the cards this year, given the favorable rate case decision mentioned above, coupled with the likelihood for sustainable water consumption, though the bottom line may contract by a dime, largely due to the tough year-over-year comparison.

California Water's subsidiary, Hawaii Water, announced it will acquire wastewater system assets from Keauhou Community Services. The deal, which would add roughly 1,500 customers to Hawaii Water's roster, is pending approval by local regulators. Financial details were not disclosed. Finally, the asset purchase comes off the heels of its recent acquisition of Rainier Water Company in Washington State. On top of expanding populations, we think bolt-on asset agreements will be par for the course.

Short-term investors are best suited here. The issue has been upgraded one notch for Timeliness, to 2 (Above Average). Notably, the stock price has risen more than 15% since our October review. That said, we think it would be prudent for patient accounts to remain on the sidelines, for now, as total return potential out to 2023-2025 does not stand out at recent levels.

Nicholas P. Patrikis *January 8, 2021*

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4¢. Next earnings report due early Feb.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '19 : $24.9 mill., $0.51/sh.
(D) In millions, adjusted for split.
(E) Excludes non-regulated revenues

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	65

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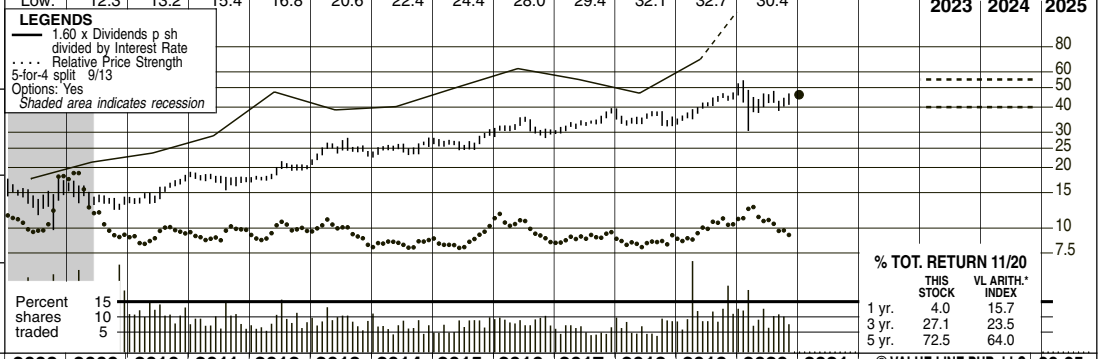
ESSENTIAL UTIL. NYSE-WTRG

RECENT PRICE **46.08** | P/E RATIO **41.5** (Trailing: 46.5 Median: 23.0) | RELATIVE P/E RATIO **1.95** | DIV'D YLD **2.3%** | VALUE LINE

TIMELINESS 3 Lowered 1/8/21
SAFETY 3 Lowered 1/8/21
TECHNICAL 2 Raised 1/1/21
BETA .95 (1.00 = Market)

High:	17.2	18.4	19.0	21.5	28.1	28.2	31.1	35.8	39.6	39.4	47.3	54.5
Low:	12.3	13.2	15.4	16.8	20.6	22.4	24.4	28.0	29.4	32.1	32.7	30.4

LEGENDS
— 1.60 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
5-for-4 split 9/13
Options: Yes
Shaded area indicates recession



Target Price Range
2023 | 2024 | 2025

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$35-$93	$64 (40%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+20%)	7%
Low	40	(-15%)	Nil

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	252	250	237
to Sell	292	235	227
Hld's(000)	161407	161504	167838

Percent shares traded 15 10 5

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.0	15.7
3 yr.	27.1	23.5
5 yr.	72.5	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.62	4.56	4.71	4.03	*6.15*	*8.15*	Revenues per sh	*8.45*
.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.07	2.12	1.90	1.73	*2.05*	*2.30*	"Cash Flow" per sh	*2.65*
.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.08	1.04	*1.05*	*1.20*	Earnings per sh A	*1.75*
.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	*.97*	*1.04*	Div'd Decl'd per sh B■	*1.30*
1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.69	2.78	2.49	*2.75*	*4.00*	Cap'l Spending per sh	*4.75*
4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	11.02	11.28	17.58	*18.55*	*18.75*	Book Value per sh	*20.00*
158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.09	220.76	*251.25*	*252.00*	Common Shs Outst'g C	*260.00*
25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	24.7	32.6	39.1	*42.2*		Avg Ann'l P/E Ratio	*27.0*
1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.25	1.24	1.76	2.12	*2.13*		Relative P/E Ratio	*1.50*
2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%	2.4%	2.2%	*2.2%*		Avg Ann'l Div'd Yield	*2.7%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $5444.0 mill. **Due in 5 Yrs** $496.0 mill.
LT Debt $5191.0 mill. **LT Interest** $196.0 mill.
(53% of Cap'l)

Pension Assets-12/19 $266.4 mill.
Oblig. $310.5 mill.

Pfd Stock None
Common Stock 245,271,727 shares
as of 10/23/20

MARKET CAP: $11.3 billion (Large Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
726.1	712.0	757.8	768.6	779.9	814.2	819.9	809.5	838.1	889.7	*1550*	*2050*	Revenues ($mill)	*2200*
124.0	144.8	153.1	205.0	213.9	201.8	234.2	239.7	192.0	224.5	*265*	*300*	Net Profit ($mill)	*455*
39.2%	32.9%	39.0%	10.0%	10.5%	6.9%	8.2%	6.6%	6.6%	6.6%	*1.5%*	*3.5%*	Income Tax Rate	*8.0%*
--	--	--	1.1%	2.4%	3.1%	3.8%	6.3%	6.8%	7.2%	*4.5%*	*7.0%*	AFUDC % to Net Profit	*7.0%*
56.6%	52.7%	52.7%	48.9%	48.5%	50.3%	48.4%	50.6%	54.4%	43.1%	*53.0%*	*57.0%*	Long-Term Debt Ratio	*40.5%*
43.4%	47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	49.4%	45.6%	56.9%	*47.0%*	*43.0%*	Common Equity Ratio	*59.5%*
2706.2	2646.8	2929.7	3003.6	3216.0	3469.5	3587.7	3965.4	4407.8	6824.2	*9880*	*10370*	Total Capital ($mill)	*12800*
3469.3	3612.9	3936.2	4167.3	4402.0	4688.9	5001.6	5399.9	5930.3	6345.8	*9525*	*10160*	Net Plant ($mill)	*12000*
5.9%	6.9%	6.6%	8.0%	7.8%	6.9%	7.6%	7.1%	5.5%	4.2%	*3.5%*	*4.0%*	Return on Total Cap'l	*4.5%*
10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	*5.5%*	*6.5%*	Return on Shr. Equity	*9.0%*
10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	*5.5%*	*6.5%*	Return on Com Equity	*9.0%*
3.7%	4.6%	4.3%	6.7%	6.1%	4.7%	5.6%	5.1%	2.1%	.9%	*NMF*	*1.0%*	Retained to Com Eq	*2.5%*
65%	60%	61%	50%	52%	60%	56%	59%	79%	84%	*92%*	*87%*	All Div'ds to Net Prof	*74%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	3.6	1868.9	8.5
Receivables	101.2	67.1	126.8
Inventory (AvgCst)	15.8	18.4	66.6
Other	26.6	58.3	109.3
Current Assets	147.2	2012.7	311.2
Accts Payable	77.3	74.9	158.2
Debt Due	160.0	130.8	253.0
Other	161.7	113.1	255.8
Current Liab.	399.0	318.8	667.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	1.5%	.5%	*11.5%*
"Cash Flow"	5.0%	2.0%	*5.5%*
Earnings	7.0%	1.5%	*7.0%*
Dividends	7.5%	8.0%	*7.5%*
Book Value	8.0%	9.0%	*7.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	187.8	203.4	215.0	203.3	809.5
2018	194.3	211.9	226.2	205.7	838.1
2019	201.1	218.9	243.6	226.1	889.7
2020	255.6	384.5	348.6	*561.3*	*1550*
2021	*550*	*450*	*450*	*600*	*2050*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.28	.34	.43	.30	1.35
2018	.29	.37	.44	d.02	1.08
2019	.09	.25	.38	.28	1.04
2020	.20	.29	.22	*.34*	*1.05*
2021	*.22*	*.33*	*.33*	*.32*	*1.20*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1913	.1913	.2047	.2047	.79
2018	.2047	.2047	.219	.219	.85
2019	.219	.219	.2343	.2343	.91
2020	.2343	.2343	.2507	.2507	
2021					

BUSINESS: Essential Utilities, Inc. became the new name for Aqua America on Feb. 3, 2020, to reflect the acquisition of Peoples, a natural gas utility, which occurred in 3/20. In 2019, Aqua Amer. provided water and wastewater services to about three million people in PA, OH, TX, IL, NC, NJ, IN, and VA. Employed 1,583. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues 2019: residential, 58%; commercial, 16%; industrial, wastewater & other, 26%. Off. & dir. own less than 1% of the common stock; BlackRock, 10.5%; Vanguard, 10.4%; (4/20 proxy). Canadian Pension Plan about 8.8%. Pres. & CEO: Christopher Franklin. Inc.: PA Addr.: 762 West Lancaster Ave., Bryn Mawr, PA 19010. Tel.: 610-525-1400. Int.: www.essential.co.

Essential Utilities' prospects should be better defined going forward. The basic makeup of the company was greatly altered last March when the water company (formerly know as Aqua America), paid $4.3 billion, and assumed over $1 billion in debt, to acquire Peoples, a large natural gas concern. Due to the transaction, Essential had to absorb a number of one-time charges related to the acquisition. Following this year's first quarter, year-over-year comparisons will become more meaningful. All told, eliminating some of the costs incurred in 2020, we estimate that Essential's share net can climb 14%, to $1.20, in 2021. *(Please note: Management was scheduled to hold a conference call providing guidance for 2021 shortly after this report was made public.)*

Dividend growth prospects are good. Following the merger, the board raised the quarterly payout 7%. We expect this rate to be maintained over the next three- to five-year period.

The company has an ambitious capital spending program. On the water side of the business, like almost all of its peers, Essential is in the midst of spending heavily to replace aging pipelines. It's also making outlays to modernize the natural gas infrastructure. Overall, the construction budget should total close to $3.0 billion over the 2020-2022 period.

Finances have weakened. Despite the large acquisition and assumption of debt, the balance sheet is in decent shape with long-term debt accounting for slightly over half of total capital. Nevertheless, we are lowering its Financial Strength two notches to B+, which is an average rating.

Regulation will continue to have a huge impact on operations. In the water utility sector, state authorities treat companies under their domain relatively constructively. In the gas business, the same cannot be said, as regulators and gas utilities seem to clash more often regarding rate hikes and allowed returns.

Shares of Essential have done well since our October report. They are ranked to only perform in line with the market averages in the coming year, though. Moreover, as is the case with most members of this group, CWCO's total return prospects to 2023-2025 are subpar.

James A. Flood *January 8, 2021*

(A) Diluted egs. Excl. nonrec. gains: '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. Quarterly EPS do not add in '19 due to a large change in the number of shares outstanding in the Dec. period. Next earnings report mid-February. **(B)** Dividends historically paid in early March, June, Sept., & Dec. ■ Div'd. reinvestment plan available (5% discount). **(C)** In millions, adjusted for stock splits. **(D)** Includes intangibles: 9/30/20, $2,342.5 bill./$9.55 a share.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	60

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MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 72.38 | P/E RATIO 32.8 (Trailing: 33.4 Median: 21.0) | RELATIVE P/E RATIO 1.54 | DIV'D YLD 1.5% | VALUE LINE

TIMELINESS 1 Raised 11/13/20
SAFETY 2 New 10/21/11
TECHNICAL 2 Raised 1/1/21
BETA .75 (1.00 = Market)

High:	17.9	19.3	19.4	19.6	22.5	23.7	28.0	44.5	46.7	60.3	67.7	76.1
Low:	11.6	14.7	16.5	17.5	18.6	19.1	21.2	25.0	32.2	34.0	51.0	48.8

18-Month Target Price Range

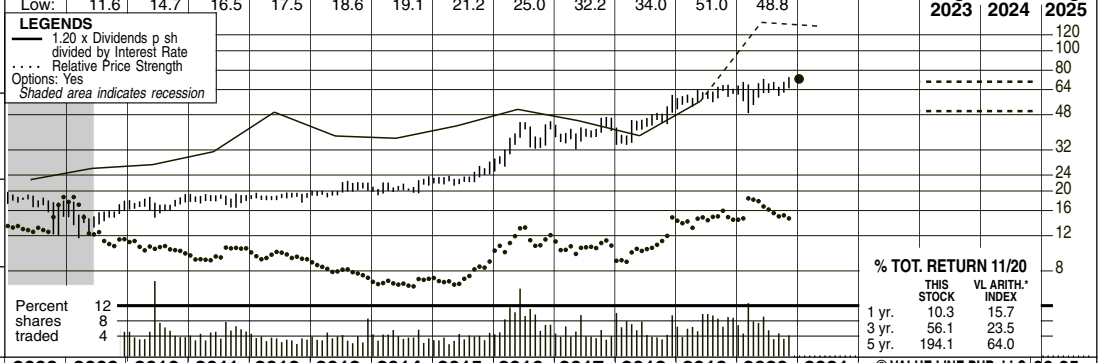
Low-High	Midpoint (% to Mid)
$57-$102	$80 (10%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	70	(-5%)	1%
Low	50	(-30%)	-6%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	55	68	52
to Sell	70	55	69
Hld's(000)	10280	10359	10357



% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	10.3	15.7
3 yr.	56.1	23.5
5 yr.	194.1	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	*8.05*	*8.45*	Revenues per sh	*9.15*
1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	2.90	*3.05*	*3.15*	"Cash Flow" per sh	*3.65*
.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	*2.20*	*2.25*	Earnings per sh A	*2.65*
.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	*1.04*	*1.10*	Div'd Decl'd per sh B■	*1.25*
2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	5.11	*3.95*	*4.50*	Cap'l Spending per sh	*5.00*
8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	18.57	*16.15*	*16.50*	Book Value per sh	*17.50*
11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	17.43	*17.65*	*17.75*	Common Shs Outst'g C	*18.00*
26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	29.7	*29.8*		Avg Ann'l P/E Ratio	*23.0*
1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.61	*1.50*		Relative P/E Ratio	*1.30*
3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%	1.6%	*1.6%*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $278.2 mill. **Due in 5 Yrs** $43.7 mill.
LT Debt $234.5 mill. **LT Interest** $7.2 mill.
(Total interest coverage: 8.5x)
(42% of Cap'l)

Pension Assets-12/19 $80.4 mill.
Oblig. $100.9 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.1 mill.

Common Stock 17,469,410 shs.
as of 10/29/20

MARKET CAP: $1.3 billion (Mid-Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
102.7	102.1	110.4	114.8	117.1	126.0	132.9	130.8	138.1	134.6	*142*	*150*	Revenues ($mill)	*165*
14.3	13.4	14.4	16.6	18.4	20.0	22.7	22.8	32.5	33.9	*34.0*	*40.0*	Net Profit ($mill)	*48.0*
32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	2.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*2.5%*
43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.8%	41.5%	*44.5%*	*42.5%*	Long-Term Debt Ratio	*38.5%*
55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	61.6%	58.2%	*55.5%*	*57.0%*	Common Equity Ratio	*61.0%*
310.5	312.5	316.5	321.4	335.8	345.4	355.4	370.7	404.1	556.7	*515*	*515*	Total Capital ($mill)	*520*
405.9	422.2	435.2	446.5	465.4	481.9	517.8	557.2	618.5	705.7	*720*	*735*	Net Plant ($mill)	*775*
5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	*8.0%*	*8.5%*	Return on Total Cap'l	*9.5%*
8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	*13.5%*	*13.5%*	Return on Shr. Equity	*15.0%*
8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	*13.5%*	*13.5%*	Return on Com Equity	*15.0%*
2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.8%	7.0%	5.4%	*7.0%*	*7.0%*	Retained to Com Eq	*8.0%*
75%	87%	83%	73%	67%	63%	58%	62%	46%	48%	*47%*	*49%*	All Div'ds to Net Prof	*47%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	3.7	2.2	5.3
Other	27.1	26.9	32.6
Current Assets	30.8	29.1	37.9
Accts Payable	19.3	23.3	24.9
Debt Due	55.8	27.2	43.7
Other	19.3	14.5	16.8
Current Liab.	94.4	65.0	85.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	2.0%	2.5%	*2.0%*
"Cash Flow"	6.0%	9.5%	*5.5%*
Earnings	8.0%	12.0%	*7.0%*
Dividends	2.5%	4.0%	*5.5%*
Book Value	4.5%	6.0%	*1.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	30.1	33.0	36.2	31.5	130.8
2018	31.2	34.9	38.7	33.3	138.1
2019	30.7	33.4	37.8	32.7	134.6
2020	31.8	35.3	39.9	*35.0*	*142*
2021	*33.0*	*37.0*	*44.0*	*36.0*	*150*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.27	.33	.46	.32	1.38
2018	.27	.52	.74	.43	1.96
2019	.39	.49	.66	.46	2.01
2020	.44	.55	.72	*.49*	*2.20*
2021	*.45*	*.55*	*.73*	*.52*	*2.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375	.22375	.24	.91
2019	.24	.24	.24	.2562	.98
2020	.2562	.2562	.2562	.2725	
2021					

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2019, the Middlesex System accounted for 60% of operating revenues. At 12/31/19, the company had 352 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.1% of the com. stock; BlackRock Inst. Trust Co., 7.7% (4/20 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tel.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water reported better-than-expected bottom-line results in the third quarter. Notably, the company earned $0.72 a share, or 9% above the previous-year tally. The strong performance stemmed largely from lower taxes due to regulatory accounting changes, as well as higher operating income. Meanwhile, despite slightly missing our $42 million mark, revenues of nearly $40 million (up 6% year over year) were aided by increased residential and wholesale water consumption, along with a wider customer base in its Delaware system.

All in all, we now expect Middlesex Water to close out 2020 with revenues of $142 million (down from our previous call of $145 million) and share net of $2.20 (up from $2.15). For this year, modest top- and bottom-line growth is probably in the cards. Water consumption should stay elevated as personal hygiene remains a top priority. Assuming the economy gets back on track in the near term, we expect the reopening of businesses and resumed construction and industrial projects to boost wholesale consumption.

Infrastructure spending is apt to be robust through mid-decade. Specifically, Middlesex's Water For Tomorrow initiative has earmarked investment funds of $300 million that will be used to improve watermains, pipe systems, wastewater treatment facilities, and other vital infrastructure upgrades. To supplement its spending, we suspect management can pass along some of these costs to consumers via periodic regulator-approved rate hikes.

The stock etched a fresh high-water mark during the December interim. Based on our Timeliness Ranking System, Middlesex shares are slated as a top selection (1) for relative year-ahead price performance and, thus, ought to appeal to momentum accounts. On the other hand, we continue to recommend that subscribers with a long-term bent remain on the sidelines, as most of the growth we envision over the coming three to five years appears to already be factored into the current quotation. Moreover, even after recently increasing the quarterly payout by 6%, the dividend yield is subpar.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Next earnings report due early February.
(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.
(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	65
Earnings Predictability	80

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SJW GROUP NYSE-SJW

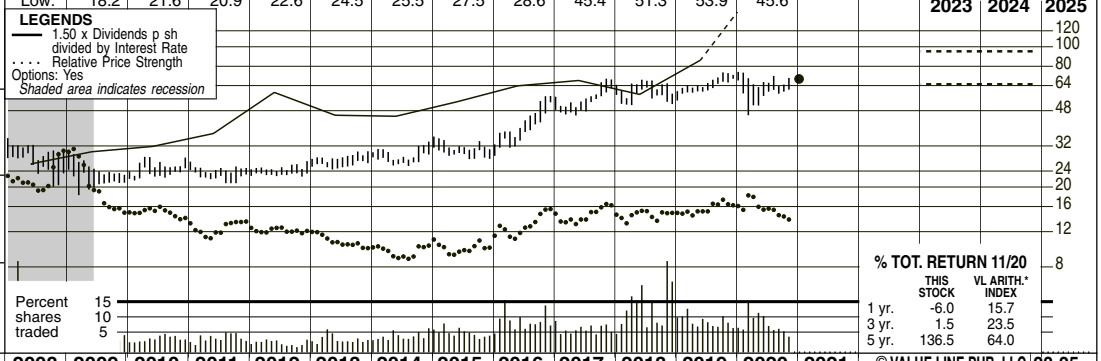
RECENT PRICE **69.04** | P/E RATIO **30.3** (Trailing: 34.2 Median: 21.0) | RELATIVE P/E RATIO **1.42** | DIV'D YLD **1.9%** | VALUE LINE

TIMELINESS — Suspended 5/4/18
SAFETY 3 New 4/22/11
TECHNICAL — Suspended 5/4/18
BETA .85 (1.00 = Market)

High:	30.4	28.2	26.8	26.9	30.1	33.7	35.7	56.9	69.3	68.4	74.5	75.0
Low:	18.2	21.6	20.9	22.6	24.5	25.5	27.5	28.6	45.4	51.3	53.9	45.6

Target Price Range 2023 | 2024 | 2025

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$51-$120	$86 (25%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+40%)	*10%*
Low	65	(-5%)	*1%*

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	72	78	62
to Sell	95	75	77
Hld's(000)	19448	19939	19827

Percent shares traded 15 10 5

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-6.0	15.7
3 yr.	1.5	23.5
5 yr.	136.5	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	14.78	*19.30*	*20.00*	Revenues per sh	*21.65*
1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.67	*3.85*	*4.25*	"Cash Flow" per sh	*5.30*
.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	1.35	*2.10*	*2.55*	Earnings per sh A	*3.65*
.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	*1.28*	*1.36*	Div'd Decl'd per sh B■	*1.66*
2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	*5.25*	*5.75*	Cap'l Spending per sh	*6.50*
10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	*32.25*	*35.60*	Book Value per sh	*39.15*
18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	*29.00*	*29.50*	Common Shs Outst'g C	*30.00*
19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	47.8	*30.6*		Avg Ann'l P/E Ratio	*22.0*
1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	2.58	*1.54*		Relative P/E Ratio	*1.20*
3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	*2.0%*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $1379.5 mill. **Due in 5 Yrs** $22.4 mill.
LT Debt $1307.6 mill. **LT Interest** $50.0 mill.
(LT Interest Coverage: 4.9x)
(60% of Cap'l)

Pension Assets-12/19 $243.5 mill.
Oblig. $338.2 mill.
Pfd Stock None.
Common Stock 28,552,177 shs.

MARKET CAP: $2.0 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
215.6	239.0	261.5	276.9	319.7	305.1	339.7	389.2	397.7	420.5	*560*	*590*	Revenues ($mill)	*650*
15.8	20.9	22.3	23.5	51.8	37.9	52.8	59.2	38.8	38.7	*61.0*	*75.0*	Net Profit ($mill)	*110*
38.8%	41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	36.7%	20.6%	25.3%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
- -	- -	- -	- -	- -	- -	- -	- -	2.0%	1.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
53.7%	56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	32.7%	59.1%	*58.0%*	*53.5%*	Long-Term Debt Ratio	*39.0%*
46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	*42.0%*	*46.5%*	Common Equity Ratio	*61.0%*
550.7	607.9	610.2	656.2	744.5	764.6	855.0	894.3	1320.7	2173.6	*2235*	*2250*	Total Capital ($mill)	*1925*
785.5	756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	1328.8	2206.5	*2300*	*2450*	Net Plant ($mill)	*2775*
4.3%	4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	2.5%	*3.5%*	*4.0%*	Return on Total Cap'l	*6.5%*
6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	*6.5%*	*7.0%*	Return on Shr. Equity	*9.5%*
6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	*6.5%*	*7.0%*	Return on Com Equity	*9.5%*
1.2%	3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	.5%	*2.5%*	*3.5%*	Retained to Com Eq	*5.0%*
80%	61%	59%	62%	29%	42%	31%	36%	60%	88%	*61%*	*53%*	All Div'ds to Net Prof	*45%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	420.7	17.9	20.2
Accts Receivable	19.2	36.3	51.4
Other	62.8	67.8	83.3
Current Assets	502.7	122.0	154.9
Accts Payable	24.9	34.9	33.8
Debt Due	- -	22.3	71.9
Other	139.1	177.4	199.7
Current Liab.	164.0	234.6	305.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	2.0%	*5.5%*
"Cash Flow"	6.0%	3.5%	*4.5%*
Earnings	7.5%	4.5%	*10.5%*
Dividends	6.0%	9.0%	*7.0%*
Book Value	7.5%	12.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	69.0	102.1	124.6	93.5	389.2
2018	75.0	99.1	124.9	98.7	397.7
2019	77.7	103.0	114.0	126.0	420.5
2020	115.8	147.2	165.9	*131.1*	*560*
2021	*120*	*150*	*175*	*145*	*590*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.18	.90	.94	.84	2.86
2018	.06	.62	.76	.38	1.82
2019	.21	.47	.33	.34	1.35
2020	.08	.69	.91	*.42*	*2.10*
2021	*.20*	*.75*	*.95*	*.65*	*2.55*

Cal-endar	QUARTERLY DIVIDENDS PAID BD■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28	.28	.28	1.12
2019	.30	.30	.30	.30	1.20
2020	.32	.32	.32	.32	
2021					

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with a total population of 450,000 people. Has 361 employees. Officers and directors own 8.3% of outstanding shares (3/20 proxy). Chairman & CEO: Richard Roth. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

SJW Group reported solid third-quarter financial results. The regulated water utility posted revenues of $166 million, a jump of 46% year over year, and earnings of $0.91 per share, nearly triple the year-earlier tally in the September interim. Underpinning the impressive advance was approximately $37 million in new revenues associated with the CTWS merger, roughly $5 million linked to water rate increases and higher customer usage, and about $10 million in reserve revenues recognized from previous years. Moreover, COVID-19-related disruptions that hampered results in previous periods have largely subsided, and merger-related expenses have notably waned.

Our 2020 share-profit forecast sits a nickel above management's upper guidance range. Our slightly-more-optimistic call for earnings of $2.10 per share stems from the recent outperformance, as well as improving post-merger operating metrics. Meanwhile, we are adding $5 million to our top-line estimate, to $560 million. For 2021, we currently look for revenues and earnings to expand 5% and 21%, respectively.

SJW Group is well positioned for long-term growth, in our view. For one, its recently bolstered geographic footprint now spans four states, which augurs well for an expanding customer base and increased operational synergies. Too, the top line ought to get a boost from the implementation of periodic rate hikes. Meanwhile, we think aggressive capital investment to replace and upgrade aging infrastructure, such as watermains, pipe systems, and treatment facilities is likely on tap. Lastly, an improving economic backdrop and a renewed focus on personal hygiene from the general public should support higher consumer water consumption in the coming years.

Strong business prospects aside, we are hesitant to recommend the stock at recent levels. Unranked SJW shares have risen about 10% in value since our October review, and are currently trading inside our 3- to 5-year Target Price Range. The dividend yield is merely average, as well. Thus, we suggest interested subscribers remain on the sidelines until a better entry point is available.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Excludes nonrecurring losses: '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early Feb. Quarterly egs. may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions.
(D) Paid special dividend of $0.17 per share on 11/17.
(E) Suspended due to recent CTWS merger.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	70
Earnings Predictability	45

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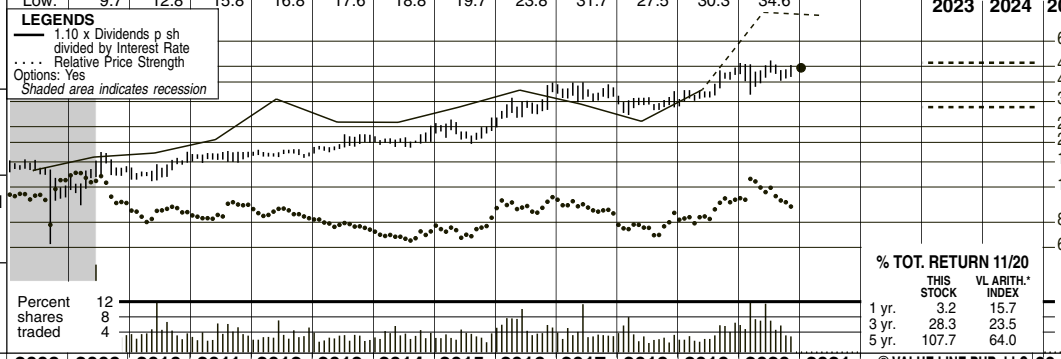
YORK WATER NDQ-YORW

RECENT PRICE **47.16** | P/E RATIO **36.3** (Trailing: 37.7 Median: 26.0) | RELATIVE P/E RATIO **1.70** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 2 Raised 5/29/20
SAFETY 3 Lowered 7/17/15
TECHNICAL 2 Raised 1/1/21
BETA .80 (1.00 = Market)

High:	18.0	18.0	18.1	18.5	22.0	24.3	26.7	39.8	39.9	36.1	47.3	51.3
Low:	9.7	12.8	15.8	16.8	17.6	18.8	19.7	23.8	31.7	27.5	30.3	34.6

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



Target Price Range
2023 | 2024 | 2025

18-Month Target Price Range
Low-High: $37-$78 | Midpoint (% to Mid): $58 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+5%)	3%
Low	30	(-35%)	-8%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	61	59	46
to Sell	52	48	53
Hld's(000)	5387	5479	5302

Percent shares traded 12 8 4

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	3.2	15.7
3 yr.	28.3	23.5
5 yr.	107.7	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.74	3.96	*4.10*	*4.20*	Revenues per sh	*5.10*
.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.58	1.70	*1.90*	*1.95*	"Cash Flow" per sh	*2.40*
.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.04	1.11	*1.30*	*1.35*	Earnings per sh A	*1.60*
.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.67	.70	*.73*	*.78*	Div'd Decl'd per sh B	*.95*
2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	1.95	.16	*.85*	*1.35*	Cap'l Spending per sh	*1.85*
4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	9.75	10.31	*11.15*	*11.60*	Book Value per sh	*12.50*
10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	12.94	13.02	*13.00*	*12.95*	Common Shs Outst'g C	*12.80*
25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	30.3	33.8	*34.9*		Avg Ann'l P/E Ratio	*25.0*
1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.74	1.64	1.83	*1.76*		Relative P/E Ratio	*1.40*
3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%	2.1%	1.9%	*1.6%*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $116.8 mill. **Due in 5 Yrs** $42.5 mill.
LT Debt $116.8 mill. **LT Interest** $5.5 mill.
(45% of Cap'l)

Pension Assets12/19 $49.3 mill.
Oblig. $47.3 mill.

Pfd Stock None

Common Stock 13,049,237 shs.

MARKET CAP: $625 million (Small Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
39.0	40.6	41.4	42.4	45.9	47.1	47.6	48.6	48.4	51.6	*53.5*	*54.5*	Revenues ($mill)	*65.0*
8.9	9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	14.4	*17.0*	*17.5*	Net Profit ($mill)	*20.5*
38.5%	35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	15.7%	13.5%	*18.5%*	*21.0%*	Income Tax Rate	*21.0%*
1.2%	1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	1.7%	2.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
48.3%	47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	42.5%	41.3%	*44.0%*	*40.0%*	Long-Term Debt Ratio	*36.0%*
51.7%	52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.5%	58.7%	*56.0%*	*60.0%*	Common Equity Ratio	*64.0%*
176.4	180.2	184.8	188.4	189.4	196.3	198.7	209.5	219.5	228.7	*260*	*250*	Total Capital ($mill)	*250*
228.4	233.0	240.3	244.2	253.2	261.4	270.9	288.8	299.2	313.2	*315*	*320*	Net Plant ($mill)	*335*
6.5%	6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	7.3%	7.4%	*7.5%*	*8.0%*	Return on Total Cap'l	*9.0%*
9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	*11.5%*	*11.5%*	Return on Shr. Equity	*13.0%*
9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	*11.5%*	*11.5%*	Return on Com Equity	*13.0%*
2.7%	2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	3.8%	4.0%	*5.0%*	*5.0%*	Retained to Com Eq	*5.0%*
72%	73%	74%	74%	64%	62%	67%	63%	64%	62%	*56%*	*58%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	- -	- -	10.9
Accounts Receivable	4.8	4.4	5.2
Inventory (Avg. Cost)	.9	1.0	1.2
Other	3.3	4.0	4.5
Current Assets	9.0	9.4	21.8
Accts Payable	3.0	3.4	6.8
Debt Due	1.0	6.5	- -
Other	6.8	5.3	5.1
Current Liab.	10.8	15.2	11.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	2.5%	*5.0%*
"Cash Flow"	6.0%	5.5%	*7.0%*
Earnings	6.0%	6.0%	*7.0%*
Dividends	3.0%	4.0%	*6.0%*
Book Value	4.5%	4.0%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	11.3	12.3	12.7	12.3	48.6
2018	11.6	12.0	12.7	12.1	48.4
2019	11.8	13.0	13.7	13.1	51.6
2020	12.9	13.3	14.3	*13.0*	*53.5*
2021	*13.0*	*13.5*	*14.5*	*13.5*	*54.5*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.20	.23	.31	.27	1.01
2018	.20	.26	.29	.29	1.04
2019	.22	.28	.35	.26	1.11
2020	.31	.32	.36	*.31*	*1.30*
2021	*.28*	*.35*	*.37*	*.35*	*1.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666	.1666	.1733	.673
2019	.1733	.1733	.1733	.1802	.70
2020	.1802	.1802	.1802	.1874	
2021					

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2019, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 201,000. Has more than 71,400 customers. Residential customers accounted for 65% of 2019 revenues; commercial and industrial (28%); other (7%). It also provides sewer billing services. Incorporated: PA. York had 106 full-time employees at 12/31/19. President/Chief Executive Officer: J.T. Hand. Officers/directors own 1.2% of the common stock (3/20 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water raised its quarterly dividend payment for the 24th-consecutive year. The distribution was increased 4%, to $0.1874 per share, equating to an annual return of about 1.6%. Though the water utility has historically been a consistent income generator, given several years of share-price advances, conservative yield-seeking investors might be better suited elsewhere at this juncture.

We think York delivered strong top- and bottom-line growth in 2020, which will likely be followed up by moderate expansion in 2021. The company posted revenues of $14.3 million and earnings of $0.36 a share in the September period, improving decently on a year-over-year basis and falling relatively in line with expectations. Fourth-quarter results were probably solid, too, driven by higher household water consumption and an expanding customer base. For this year, we are reiterating our calls for low single-digit revenue and earnings growth, to $54.5 million and $1.35 per share, respectively.

Long-term business prospects are bright, and should be accompanied by aggressive spending on infrastructure upgrades. Since our previous review, management invested nearly $7 million on a standpipe and other construction projects, with an estimated $12 million allocation likely tapped in the December period. Over the coming years, as the company's water delivery infrastructure ages and its customer base expands, York ought to spend heavily on pipe replacements, wastewater treatment facilities, service lines, and pumping stations. Overall, York should be able to recoup most of these investments via increased customer rates through its Distribution Systems Improvement Charge program, which requires approval from Pennsylvania regulators.

The stock price is hovering around recently etched all-time highs. Over the coming six to 12 months, YORW shares are pegged to outpace the broader market averages, thus ought to appeal to subscribers with a short-term horizon. On the other hand, 3- to 5-year total return potential is unenticing at recent levels. In fact, long-time investors might want to consider booking some profits at these elevated valuations.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Next earnings report due early February.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	65
Earnings Predictability	100

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Community Utilities of Pennsylvania, Inc.
Summary of Risk Premium Models for the
Proxy Group of Seven Water Companies

	Proxy Group of Seven Water Companies	
Predictive Risk Premium Model (PRPM) (1)	11.35	%
Risk Premium Using an Adjusted Total Market Approach (2)	10.44	%
Average	10.90	%

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	
Proxy Group of Seven Water Companies	LT Average Predicted Variance	Spot Predicted Variance	Recommended Variance (2)	GARCH Coefficient	Predicted Risk Premium (3)	Risk-Free Rate (4)	Indicated ROE (5)	
American States Water Company	0.38%	0.34%	0.38%	1.8385	8.67%	2.48%	11.15%	
American Water Works Company, Inc.	0.23%	0.19%	0.23%	5.6955	17.01%	2.48%	19.49%	(6)
California Water Service Group	0.32%	0.35%	0.32%	2.0043	7.91%	2.48%	10.39%	
Essential Utilities, Inc.	0.44%	0.40%	0.44%	2.2352	12.51%	2.48%	14.99%	
Middlesex Water Company	0.30%	0.35%	0.30%	2.1038	7.95%	2.48%	10.43%	
SJW Group	0.41%	0.37%	0.41%	1.5275	7.86%	2.48%	10.34%	
York Water Company	0.44%	0.36%	0.44%	2.0784	11.66%	2.48%	14.14%	
						Average	11.91%	
						Median	10.79%	
						Average of Mean and Median	11.35%	

NMF = Not Meaningful Figure

Notes:

(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.

(2) Given current market conditions, I recommend using the long-term average predicted variance.

(3) $(1+(\text{Column [3]} * \text{Column [4]})^{\wedge 12}) - 1$.

(4) From note 2 on page 2 of Schedule DWD-5.

(5) Column [5] + Column [6].

(6) Results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Seven Water Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.19	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.45	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.64	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.05	(3)
5.	Adjusted Prospective Bond Yield	3.69	%
6.	Equity Risk Premium (4)	6.75	
7.	Risk Premium Derived Common Equity Cost Rate	10.44	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10 and 11 of this Schedule).
(2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.45% from page 4 of this Schedule.
(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 5 of this Schedule. The 0.05% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.28% = 0.05%) as derived from page 4 of this Schedule.
(4) From page 7 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1] Aaa Rated Corporate Bond	[2] A2 Rated Public Utility Bond	[3] Baa2 Rated Public Utility Bond
Feb-2021	2.70 %	3.09 %	3.37 %
Jan-2021	2.45	2.91	3.19
Dec-2020	2.26	2.77	3.05
Average	2.47 %	2.92 %	3.20 %

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:
0.45 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:
0.28 % (2)

Notes:
(1) Column [2] - Column [1].
(2) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Service

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for
Proxy Group of Seven Water Companies

	Moody's Long-Term Issuer Rating February 2021		Standard & Poor's Long-Term Issuer Rating February 2021	
Proxy Group of Seven Water Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting(1)
American States Water Company (2)	A2	6.0	A+	5.0
American Water Works Company Inc (3)	A3	7.0	A	6.0
California Water Service Group (4)	NR	- -	A+	5.0
Essential Utilities, Inc. (5)	NR	- -	A	6.0
Middlesex Water Company	NR	- -	A	6.0
SJW Group (6)	NR	- -	A/A-	6.5
York Water Company	NR	- -	A-	7.0
Average	A2/A3	6.5	A	5.9

Notes:

(1) From page 6 of this Schedule.
(2) Ratings that of Golden State Water Company.
(3) Ratings that of New Jersey and Pennsylvania American Water Companies.
(4) Ratings that of California Water Service Company.
(5) Ratings that of Aqua Pennsylvania, Inc.
(6) Ratings that of San Jose Water Company and The Connecticut Water Company.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Community Utilities of Pennsylvania, Inc.
Judgment of Equity Risk Premium for the
Proxy Group of Seven Water Companies

Line No.		Proxy Group of Seven Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	7.63 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A2 rated bonds (2)	5.86
3.	Average equity risk premium	6.75 %

Notes: (1) From page 8 of this Schedule.
(2) From page 12 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Seven Water Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.78 %
2.	Regression on Ibbotson Risk Premium Data (2)	9.15
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.69
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.56
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.15
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.16
7.	Conclusion of Equity Risk Premium	9.08 %
8.	Adjusted Beta (7)	0.84
9.	Forecasted Equity Risk Premium	7.63 %

Notes provided on page 9 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Water Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2020 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa2 corporate bonds from 1928-2019.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa2 rated corporate bond yields from 1928-2019 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa2 corporate monthly bond yields, from January 1928 through February 2021.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.19% (from page 3 of this Schedule) from the projected 3-5 year total annual market return of 8.75% (described fully in note 1 on page 2 of Schedule DWD-5).

(5) Using data from Value Line for the S&P 500, an expected total return of 14.34% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.19% results in an expected equity risk premium of 11.15%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 16.35% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.19% results in an expected equity risk premium of 13.16%.

(7) Average of mean and median beta from Schedule DWD-5.

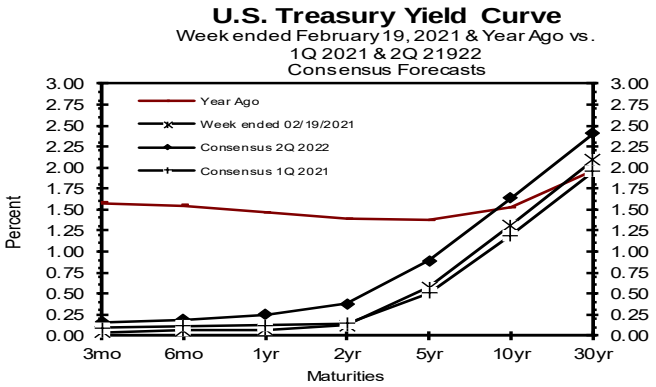
Sources of Information:

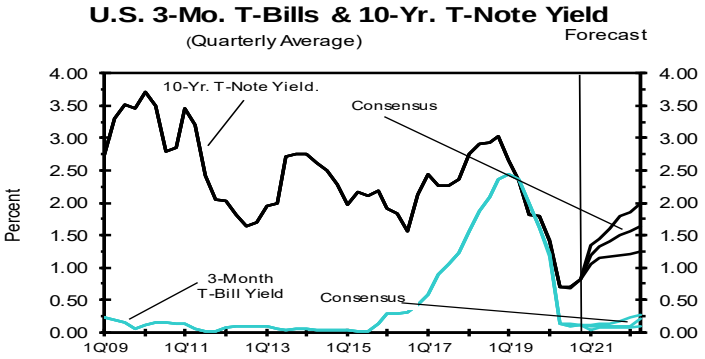
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2021 and December 1, 2020
Bloomberg Professional Service

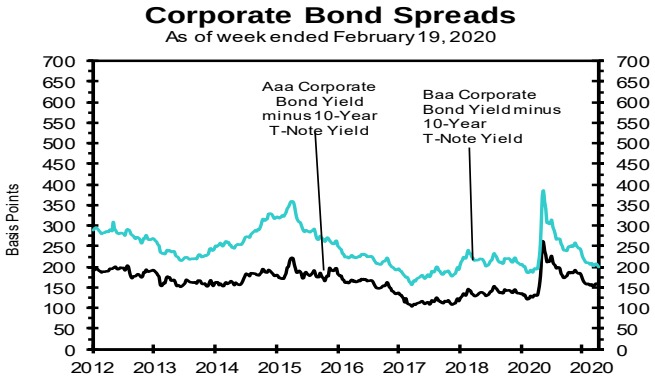
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

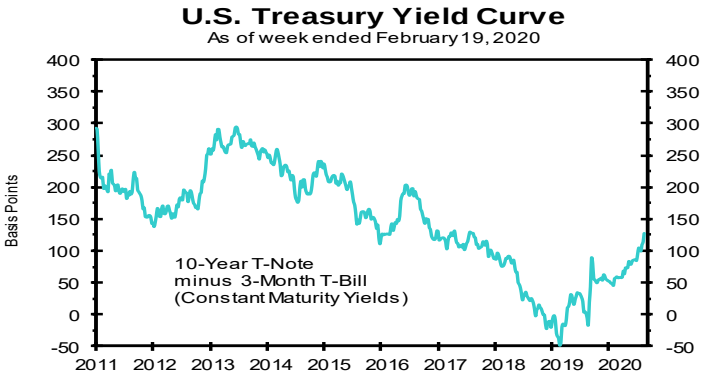
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	1Q	2Q	3Q	4Q	1Q	2Q
Interest Rates	Feb 19	Feb 12	Feb 5	Jan 29	Jan	Dec	Nov	4Q 2020	2021	2021	2021	2021	2022	2022
Federal Funds Rate	0.08	0.08	0.07	0.08	0.09	0.09	0.09	0.09	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**
LIBOR, 3-mo.	0.18	0.20	0.19	0.21	0.22	0.23	0.22	0.22	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**
Commercial Paper, 1-mo.	0.07	0.06	0.07	0.07	0.08	0.09	0.09	0.09	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**
Treasury bill, 3-mo.	0.04	0.05	0.05	0.07	0.08	0.09	0.09	0.09	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
Treasury bill, 6-mo.	0.06	0.06	0.07	0.08	0.09	0.09	0.10	0.10	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
Treasury bill, 1 yr.	0.07	0.07	0.07	0.09	0.10	0.10	0.12	0.12	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**
Treasury note, 2 yr.	0.12	0.11	0.11	0.12	0.13	0.14	0.17	0.15	**0.1**	**0.2**	**0.2**	**0.3**	**0.3**	**0.4**
Treasury note, 5 yr.	0.57	0.48	0.45	0.42	0.45	0.39	0.39	0.37	**0.5**	**0.6**	**0.7**	**0.8**	**0.8**	**0.9**
Treasury note, 10 yr.	1.31	1.18	1.14	1.06	1.08	0.93	0.87	0.86	**1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**1.6**
Treasury note, 30 yr.	2.09	1.96	1.91	1.81	1.82	1.67	1.62	1.62	**2.0**	**2.1**	**2.2**	**2.3**	**2.4**	**2.4**
Corporate Aaa bond	2.86	2.77	2.74	2.64	2.64	2.52	2.58	2.58	**2.6**	**2.8**	**2.9**	**3.0**	**3.0**	**3.1**
Corporate Baa bond	3.31	3.22	3.21	3.13	3.14	3.03	3.13	3.14	**3.5**	**3.7**	**3.8**	**3.9**	**4.0**	**4.0**
State & Local bonds	2.60	2.58	2.62	2.61	2.65	2.70	2.82	2.82	**2.6**	**2.7**	**2.8**	**2.9**	**3.0**	**3.0**
Home mortgage rate	2.81	2.73	2.73	2.73	2.74	2.68	2.77	2.76	**2.9**	**3.0**	**3.1**	**3.2**	**3.3**	**3.4**
	History								Consensus Forecasts-Quarterly					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Key Assumptions	2019	2019	2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022
Fed's AFE $ Index	109.5	110.4	110.6	110.5	111.4	112.4	107.3	105.2	**103.6**	**103.2**	**103.1**	**103.2**	**102.9**	**103.0**
Real GDP	2.9	1.5	2.6	2.4	-5.0	-31.4	33.4	4.1	**4.3**	**6.8**	**6.3**	**4.6**	**3.3**	**2.9**
GDP Price Index	1.2	2.5	1.5	1.4	1.4	-1.8	3.5	2.1	**2.2**	**1.8**	**1.9**	**1.9**	**1.9**	**2.0**
Consumer Price Index	0.7	3.5	1.3	2.6	1.0	-3.1	4.7	2.4	**2.8**	**2.0**	**2.0**	**2.1**	**2.1**	**2.1**
PCE Price Index	0.6	2.5	1.4	1.5	1.3	-1.6	3.7	1.6	**2.7**	**1.9**	**1.9**	**1.9**	**1.9**	**2.0**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).









Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2022 through 2026 and averages for the five-year periods 2022-2026 and 2027-2031. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year					Five-Year Averages	
		2022	2023	2024	2025	2026	2022-2026	2027-2031
1. Federal Funds Rate	CONSENSUS	**0.1**	**0.3**	**0.7**	**1.2**	**1.5**	**0.8**	**1.8**
	Top 10 Average	0.2	0.7	1.4	2.0	2.4	1.3	2.5
	Bottom 10 Average	0.1	0.1	0.2	0.4	0.6	0.3	1.2
2. Prime Rate	CONSENSUS	**3.3**	**3.5**	**3.9**	**4.3**	**4.6**	**3.9**	**4.9**
	Top 10 Average	3.4	3.7	4.4	5.0	5.4	4.4	5.4
	Bottom 10 Average	3.2	3.2	3.3	3.5	3.8	3.4	4.5
3. LIBOR, 3-Mo.	CONSENSUS	**0.4**	**0.6**	**1.1**	**1.5**	**1.8**	**1.1**	**2.2**
	Top 10 Average	0.5	1.0	1.7	2.2	2.6	1.6	2.7
	Bottom 10 Average	0.3	0.3	0.5	0.8	1.1	0.6	1.6
4. Commercial Paper, 1-Mo	CONSENSUS	**0.3**	**0.7**	**1.2**	**1.6**	**1.9**	**1.1**	**2.1**
	Top 10 Average	0.4	0.9	1.6	2.1	2.4	1.5	2.5
	Bottom 10 Average	0.2	0.4	0.8	1.2	1.5	0.8	1.7
5. Treasury Bill Yield, 3-Mo	CONSENSUS	**0.2**	**0.4**	**0.8**	**1.2**	**1.5**	**0.8**	**1.9**
	Top 10 Average	0.3	0.7	1.5	2.0	2.4	1.4	2.5
	Bottom 10 Average	0.1	0.1	0.2	0.5	0.7	0.3	1.3
6. Treasury Bill Yield, 6-Mo	CONSENSUS	**0.2**	**0.5**	**0.9**	**1.3**	**1.6**	**0.9**	**2.0**
	Top 10 Average	0.3	0.8	1.6	2.1	2.5	1.5	2.6
	Bottom 10 Average	0.1	0.2	0.3	0.5	0.8	0.4	1.4
7. Treasury Bill Yield, 1-Yr	CONSENSUS	**0.3**	**0.6**	**1.0**	**1.4**	**1.8**	**1.0**	**2.1**
	Top 10 Average	0.5	1.0	1.7	2.3	2.6	1.6	2.7
	Bottom 10 Average	0.2	0.3	0.4	0.7	0.9	0.5	1.6
8. Treasury Note Yield, 2-Yr	CONSENSUS	**0.4**	**0.8**	**1.2**	**1.6**	**1.9**	**1.2**	**2.3**
	Top 10 Average	0.7	1.2	1.9	2.4	2.8	1.8	2.9
	Bottom 10 Average	0.2	0.3	0.6	0.8	1.1	0.6	1.7
9. Treasury Note Yield, 5-Yr	CONSENSUS	**0.8**	**1.2**	**1.6**	**2.0**	**2.3**	**1.5**	**2.5**
	Top 10 Average	1.1	1.6	2.3	2.8	3.1	2.1	3.1
	Bottom 10 Average	0.5	0.7	1.0	1.2	1.4	1.0	1.9
10. Treasury Note Yield, 10-Yr	CONSENSUS	**1.3**	**1.7**	**2.0**	**2.4**	**2.6**	**2.0**	**2.8**
	Top 10 Average	1.7	2.2	2.7	3.1	3.4	2.6	3.5
	Bottom 10 Average	0.9	1.2	1.4	1.7	1.8	1.4	2.2
11. Treasury Bond Yield, 30-Yr	CONSENSUS	**2.1**	**2.4**	**2.8**	**3.1**	**3.4**	**2.8**	**3.6**
	Top 10 Average	2.5	3.0	3.5	4.0	4.2	3.4	4.3
	Bottom 10 Average	1.6	1.9	2.2	2.4	2.6	2.1	2.9
12. Corporate Aaa Bond Yield	CONSENSUS	**2.8**	**3.2**	**3.6**	**4.0**	**4.2**	**3.6**	**4.5**
	Top 10 Average	3.1	3.6	4.2	4.6	4.9	4.1	5.0
	Bottom 10 Average	2.4	2.8	3.0	3.3	3.6	3.0	3.9
13. Corporate Baa Bond Yield	CONSENSUS	**3.9**	**4.3**	**4.7**	**5.0**	**5.2**	**4.6**	**5.4**
	Top 10 Average	4.3	4.7	5.2	5.6	5.9	5.1	6.0
	Bottom 10 Average	3.5	3.9	4.1	4.3	4.5	4.1	4.9
14. State & Local Bonds Yield	CONSENSUS	**2.8**	**3.1**	**3.4**	**3.6**	**3.8**	**3.3**	**3.9**
	Top 10 Average	3.1	3.5	3.8	4.1	4.3	3.8	4.3
	Bottom 10 Average	2.5	2.8	2.9	3.2	3.4	2.9	3.6
15. Home Mortgage Rate	CONSENSUS	**3.2**	**3.5**	**3.9**	**4.2**	**4.5**	**3.9**	**4.7**
	Top 10 Average	3.5	3.9	4.4	4.9	5.2	4.4	5.2
	Bottom 10 Average	2.9	3.2	3.4	3.6	3.8	3.4	4.2
A. Fed's AFE Nominal $ Index	CONSENSUS	**107.2**	**107.0**	**106.5**	**106.4**	**106.6**	**106.7**	**106.7**
	Top 10 Average	109.0	108.9	108.8	108.9	109.5	109.0	110.2
	Bottom 10 Average	105.4	105.2	104.4	103.8	103.7	104.5	103.0
		Year-Over-Year, % Change					Five-Year Averages	
		2022	2023	2024	2025	2026	2022-2026	2027-2031
B. Real GDP	CONSENSUS	**3.2**	**2.5**	**2.3**	**2.2**	**2.1**	**2.4**	**2.1**
	Top 10 Average	3.8	3.0	2.6	2.5	2.4	2.9	2.4
	Bottom 10 Average	2.6	2.1	1.9	1.9	1.8	2.1	1.8
C. GDP Chained Price Index	CONSENSUS	**1.9**	**2.0**	**2.1**	**2.1**	**2.1**	**2.0**	**2.1**
	Top 10 Average	2.2	2.3	2.3	2.3	2.3	2.3	2.3
	Bottom 10 Average	1.7	1.8	1.9	1.9	1.9	1.8	1.9
D. Consumer Price Index	CONSENSUS	**2.1**	**2.2**	**2.2**	**2.1**	**2.2**	**2.1**	**2.2**
	Top 10 Average	2.4	2.4	2.4	2.4	2.4	2.4	2.4
	Bottom 10 Average	1.8	1.9	1.9	1.9	1.9	1.9	1.9
E. PCE Price Index	CONSENSUS	**1.9**	**2.0**	**2.1**	**2.1**	**2.1**	**2.0**	**2.1**
	Top 10 Average	2.2	2.2	2.2	2.2	2.3	2.2	2.4
	Bottom 10 Average	1.7	1.8	1.9	1.9	1.9	1.8	1.9

Community Utilities of Pennsylvania, Inc.
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.21 %
2.	Regression of Historical Equity Risk Premium (2)	6.76
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.51
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	7.10
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.72
6.	Average Equity Risk Premium (6)	5.86 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2019. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2019 referenced in note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - February 2021.

(4) Using data from Value Line for the S&P Utilities Index, an expected return of 10.74% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.64%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 7.10%. (10.74% - 3.64% = 7.10%)

(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.36% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.64%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 5.72%. (9.36% - 3.64% = 5.72%)

(6) Average of lines 1 through 5.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seven Water Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Company	0.65	0.58	0.62	9.94 %	2.48 %	8.64 %	9.59 %	9.11 %
American Water Works Company, Inc.	0.85	1.01	0.93	9.94	2.48	11.72	11.90	11.81
California Water Service Group	0.65	0.61	0.63	9.94	2.48	8.74	9.66	9.20
Essential Utilities, Inc.	0.95	1.02	0.98	9.94	2.48	12.22	12.27	12.24
Middlesex Water Company	0.75	0.76	0.76	9.94	2.48	10.03	10.63	10.33
SJW Group	0.85	0.95	0.90	9.94	2.48	11.42	11.67	11.55
York Water Company	0.80	0.94	0.87	9.94	2.48	11.13	11.45	11.29
Mean			0.81			10.56 %	11.02 %	10.79 %
Median			0.87			11.13 %	11.45 %	11.29 %
Average of Mean and Median			0.84			10.85	11.24	11.04 %

Notes on page 2 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2019)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2019:	12.10	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.09	
MRP based on Ibbotson Historical Data:	7.01	%

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2019)	9.81	%

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - February 2021)	10.81	%

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending February 26, 2021)

Total projected return on the market 3-5 years hence*:	8.75	%
Projected Risk-Free Rate (see note 2):	2.48	
MRP based on Value Line Summary & Index:	6.27	%

*Forcasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	14.34	%
Projected Risk-Free Rate (see note 2):	2.48	
MRP based on Value Line data	11.86	%

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	16.35	%
Projected Risk-Free Rate (see note 2):	2.48	
MRP based on Bloomberg data	13.87	%
Average of Value Line, Ibbotson, and Bloomberg MRP:	9.94	%

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 10-11 of Schedule DWD-4.) The projection of the risk-free rate is illustrated below:

First Quarter 2021	2.00	%
Second Quarter 2021	2.10	
Third Quarter 2021	2.20	
Fourth Quarter 2021	2.30	
First Quarter 2022	2.40	
Second Quarter 2022	2.40	
2022-2026	2.80	
2027-2031	3.60	
	2.48	%

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2021 and December 1, 2020
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group was then selected based on the unadjusted beta range of 0.46 – 0.78 and residual standard error of the regression range of 2.9198 – 3.4826 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Utility Proxy Group's residual standard error of the regression is 0.1407. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1407 = \frac{3.2012}{\sqrt{518}} = \frac{3.2012}{22.7596}$$

Source of Information: Value Line, Inc., January 2021
Value Line Investment Survey (Standard Edition)

Community Utilities of Pennsylvania, Inc.
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

Proxy Group of Seven Water Companies	[1] Value Line Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
American States Water Company	0.65	0.42	2.7095	0.0681
American Water Works Company, Inc.	0.85	0.74	3.1550	0.0793
California Water Service Group	0.65	0.41	3.0820	0.0775
Essential Utilities, Inc.	0.95	0.86	2.7562	0.0693
Middlesex Water Company	0.75	0.56	3.4739	0.0873
SJW Group	0.85	0.70	3.5772	0.0899
York Water Company	0.80	0.68	3.6547	0.0919
Average	0.79	0.62	3.2012	0.0805

Beta Range (+/- 2 std. Devs. of Beta)	0.46	0.78
2 std. Devs. of Beta	0.16	
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.9198	3.4826
Std. dev. of the Res. Std. Err.	0.1407	
2 std. devs. of the Res. Std. Err.	0.2814	

Source of Information: Valueline Proprietary Database, January 2021

Community Utilities of Pennsylvania, Inc.
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Water Companies

Proxy Group of Twenty-Six Non-Price Regulated Companies	[1] VL Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Adobe, Inc.	0.75	0.61	3.1957	0.0803
Bio-Rad Labs	0.80	0.62	3.1060	0.0781
Bristol-Myers Squibb	0.85	0.75	3.3451	0.0841
Caseys General Stores, Inc.	0.85	0.71	3.2464	0.0816
C.H. Robinson Worldwide Inc	0.65	0.47	2.9403	0.0739
CSG Systems Int'l	0.75	0.59	3.2443	0.0816
Citrix Sys.	0.70	0.49	3.4414	0.0865
Dollar General Corporation	0.70	0.47	3.2430	0.0815
Ennis, Inc.	0.80	0.65	3.3129	0.0833
FirstCash, Inc.	0.85	0.72	3.1426	0.0790
Heartland Express	0.75	0.57	3.0941	0.0778
Ingredion Inc.	0.90	0.78	2.9266	0.0736
Intel Corp.	0.85	0.70	3.3366	0.0839
Lancaster Colony Corp.	0.70	0.52	3.0966	0.0778
Lilly (Eli)	0.75	0.55	2.9808	0.0749
ManTech Int'l 'A'	0.85	0.72	3.0697	0.0772
MAXIMUS, Inc.	0.80	0.69	3.2296	0.0812
Monster Beverage Corporation	0.85	0.73	3.4547	0.0869
Smucker (J.M.)	0.70	0.48	3.0571	0.0769
Schneider National, Inc.	0.80	0.66	3.4457	0.0919
Bio-Techne Corp.	0.80	0.63	3.1829	0.0800
TriMas Corporation	0.90	0.77	3.4140	0.0858
Tyler Technologies	0.75	0.57	3.2350	0.0813
United Parcel Serv.	0.80	0.64	2.9674	0.0746
Walgreens Boots Alliance	0.75	0.61	3.1780	0.0799
West Pharmaceutical Services Inc	0.80	0.69	3.1948	0.0803
Average	0.79	0.63	3.1954	0.0805
Proxy Group of Seven Water Companies	0.79	0.62	3.2012	0.0805

Source of Information: Valueline Proprietary Database, January 2021

Community Utilities of Pennsylvania, Inc.
Summary of Cost of Equity Models Applied to
Proxy Group of Twenty-Six Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Water Companies

Principal Methods	Proxy Group of Twenty-Six Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)	11.05 %
Risk Premium Model (RPM) (2)	11.42
Capital Asset Pricing Model (CAPM) (3)	10.82
Mean	11.10 %
Median	11.05 %
Average of Mean and Median	11.08 %

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.
(3) From page 6 of this Schedule.

Community Utilities of Pennsylvania, Inc.
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty-Six Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Bloomberg Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Adobe, Inc.	- %	14.00 %	19.00 %	16.67 %	15.98 %	16.41 %	- %	NA %
Bio-Rad Labs	-	11.50	NA	17.80	28.75	19.35	-	NA
Bristol-Myers Squibb	3.15	12.50	6.00	21.35	30.61	17.61	3.43	21.04 (2)
Caseys General Stores, Inc.	0.72	9.00	NA	7.40	16.31	10.90	0.76	11.66
C.H. Robinson Worldwide Inc	2.20	7.00	9.00	9.94	8.95	8.72	2.30	11.02
CSG Systems Int'l	2.22	10.00	NA	(5.00)	8.00	9.00	2.32	11.32
Citrix Sys.	1.12	9.00	8.10	10.85	10.30	9.56	1.17	10.73
Dollar General Corporation	0.70	13.00	13.70	17.31	15.30	14.83	0.75	15.58
Ennis, Inc.	4.91	3.00	NA	5.00	NA	4.00	5.01	9.01
FirstCash, Inc.	1.68	9.50	NA	23.80	NA	16.65	1.82	18.47
Heartland Express	0.43	10.00	NA	12.50	NA	11.25	0.45	11.70
Ingredion Inc.	3.15	6.00	NA	1.90	11.00	6.30	3.25	9.55
Intel Corp.	2.55	7.00	7.50	5.43	5.24	6.29	2.63	8.92
Lancaster Colony Corp.	1.70	6.50	NA	3.00	NA	4.75	1.74	6.49
Lilly (Eli)	1.85	10.00	12.20	11.60	NA	11.27	1.95	13.22
ManTech Int'l 'A'	1.75	12.00	5.10	4.53	6.53	7.04	1.81	8.85
MAXIMUS, Inc.	1.46	10.50	NA	12.50	5.00	9.33	1.53	10.86
Monster Beverage Corporation	-	12.50	12.00	14.67	13.07	13.06	-	NA
Smucker (J.M.)	3.12	2.50	1.50	(0.72)	1.28	1.76	3.15	4.91
Schneider National, Inc.	1.28	2.50	14.00	15.25	14.48	11.56	1.35	12.91
Bio-Techne Corp.	0.37	NMF	15.00	15.00	13.53	14.51	0.40	14.91
TriMas Corporation	-	10.00	NA	9.34	5.00	8.11	-	NA
Tyler Technologies	-	10.50	15.00	10.00	18.43	13.48	-	NA
United Parcel Serv.	2.49	8.00	8.70	10.06	8.04	8.70	2.60	11.30
Walgreens Boots Alliance	4.11	6.00	5.70	3.85	3.64	4.80	4.21	9.01
West Pharmaceutical Services Inc	0.24	17.00	22.60	22.60	18.01	20.05	0.26	20.31 (2)
							Mean	11.07 %
							Median	11.02 %
							Average of Mean and Median	11.05 %

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regluated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of February 26, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, Bloomberg, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

(2) DCF results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 02/26/2021
www.yahoo.com Downloaded on 02/26/2021
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Twenty-Six Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.11 %
2.	Adjustment to Reflect Proxy Group Bond Rating (2)	(0.14)
3.	Prospective Bond Yield Applicable to the Non-Price Regulated Proxy Group	3.97
4.	Equity Risk Premium (3)	7.45
5.	Risk Premium Derived Common Equity Cost Rate	11.42 %

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated March 1, 2021 and December 1, 2020 (see pages 10 and 11 of Schedule DWD-4). The estimates are detailed below.

First Quarter 2021	3.50 %
Second Quarter 2021	3.70
Third Quarter 2021	3.80
Fourth Quarter 2021	3.90
First Quarter 2022	4.00
Second Quarter 2022	4.00
2022-2026	4.60
2027-2031	5.40
Average	4.11 %

(2) To reflect the Baa1 average rating of the Non-Price Regulated Proxy Group, the prosepctive yield on Baa2 corporate bonds must be adjusted downward by 1/3 of the spread between A2 and Baa2 corporate bond yields as shown below:

	A2 Corp. Bond Yield	Baa2 Corp. Bond Yield	Spread
Feb-2021	3.03 %	3.42 %	0.39 %
Jan-2021	2.84	3.25	0.41
Dec-2020	2.72	3.16	0.44
		Average yield spread	0.41 %
		1/3 of spread	0.14 %

(3) From page 5 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Twenty-Six Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Water Companies

	Moody's Long-Term Issuer Rating February 2021		Standard & Poor's Long-Term Issuer Rating February 2021	
Proxy Group of Twenty-Six Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Adobe, Inc.	A2	6.0	A	6.0
Bio-Rad Labs	Baa2	9.0	BBB	9.0
Bristol-Myers Squibb	A2	6.0	A+	5.0
Caseys General Stores, Inc.	NR	--	NR	--
C.H. Robinson Worldwide Inc	Baa2	9.0	BBB+	8.0
CSG Systems Int'l	NA	--	BB+	11.0
Citrix Sys.	Baa3	10.0	BBB	9.0
Dollar General Corporation	Baa2	9.0	BBB	9.0
Ennis, Inc.	NR	--	NR	--
FirstCash, Inc.	Ba1	11.0	BB	12.0
Heartland Express	NR	--	NR	--
Ingredion Inc.	Baa1	8.0	BBB	9.0
Intel Corp.	A1	5.0	A+	5.0
Lancaster Colony Corp.	NR	--	NR	--
Lilly (Eli)	A2	6.0	A+	5.0
ManTech Int'l 'A'	NR	--	BB+	11.0
MAXIMUS, Inc.	NR	--	NR	--
Monster Beverage Corporation	NR	--	NR	--
Smucker (J.M.)	Baa2	9.0	BBB	9.0
Schneider National, Inc.	NR	--	NR	--
Bio-Techne Corp.	NR	--	NR	--
TriMas Corporation	Ba3	13.0	BB	12.0
Tyler Technologies	NR	--	NR	--
United Parcel Serv.	A2	6.0	A-	7.0
Walgreens Boots Alliance	Baa2	9.0	BBB	9.0
West Pharmaceutical Services Inc	NR	--	NR	--
Average	Baa1	8.3	BBB+/BBB	8.5

Notes:
(1) From page 6 of Schedule DWD-4.

Source of Information:
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Twenty-Six Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Twenty-Six Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.78 %
2.	Regression on Ibbotson Risk Premium Data (2)	9.15
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.69
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.56
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.15
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.16
7.	Conclusion of Equity Risk Premium	9.08 %
8.	Adjusted Beta (7)	0.82
9.	Forecasted Equity Risk Premium	7.45 %

Notes:
(1) From note 1 of page 9 of Schedule DWD-4.
(2) From note 2 of page 9 of Schedule DWD-4.
(3) From note 3 of page 9 of Schedule DWD-4.
(4) From note 4 of page 9 of Schedule DWD-4.
(5) From note 5 of page 9 of Schedule DWD-4.
(6) From note 6 of page 9 of Schedule DWD-4.
(7) Average of mean and median beta from page 6 of this Schedule.

Sources of Information:
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2021 and December 1, 2020
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty-Six Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Adobe, Inc.	0.75	0.86	0.81	9.94 %	2.48 %	10.53 %	11.00 %	10.77 %
Bio-Rad Labs	0.75	0.69	0.72	9.94	2.48	9.64	10.33	9.98
Bristol-Myers Squibb	0.85	0.81	0.83	9.94	2.48	10.73	11.15	10.94
Caseys General Stores, Inc.	0.85	0.91	0.88	9.94	2.48	11.23	11.52	11.37
C.H. Robinson Worldwide Inc	0.70	0.66	0.68	9.94	2.48	9.24	10.03	9.64
CSG Systems Int'l	0.75	0.92	0.83	9.94	2.48	10.73	11.15	10.94
Citrix Sys.	0.70	0.62	0.66	9.94	2.48	9.04	9.88	9.46
Dollar General Corporation	0.70	0.64	0.67	9.94	2.48	9.14	9.96	9.55
Ennis, Inc.	0.80	0.83	0.82	9.94	2.48	10.63	11.08	10.85
FirstCash, Inc.	0.85	0.95	0.90	9.94	2.48	11.42	11.67	11.55
Heartland Express	0.70	0.76	0.73	9.94	2.48	9.73	10.41	10.07
Ingredion Inc.	0.90	0.93	0.92	9.94	2.48	11.62	11.82	11.72
Intel Corp.	0.85	0.97	0.91	9.94	2.48	11.52	11.75	11.64
Lancaster Colony Corp.	0.70	0.71	0.71	9.94	2.48	9.54	10.26	9.90
Lilly (Eli)	0.75	0.72	0.73	9.94	2.48	9.73	10.41	10.07
ManTech Int'l 'A'	0.85	1.11	0.98	9.94	2.48	12.22	12.27	12.24
MAXIMUS, Inc.	0.80	0.90	0.85	9.94	2.48	10.93	11.30	11.11
Monster Beverage Corporation	0.85	1.00	0.92	9.94	2.48	11.62	11.82	11.72
Smucker (J.M.)	0.70	0.50	0.60	9.94	2.48	8.44	9.44	8.94 (4)
Schneider National, Inc.	0.80	0.73	0.77	9.94	2.48	10.13	10.70	10.42
Bio-Techne Corp.	0.80	0.91	0.85	9.94	2.48	10.93	11.30	11.11
TriMas Corporation	0.90	0.97	0.94	9.94	2.48	11.82	11.97	11.90
Tyler Technologies	0.75	0.76	0.76	9.94	2.48	10.03	10.63	10.33
United Parcel Serv.	0.80	0.85	0.83	9.94	2.48	10.73	11.15	10.94
Walgreens Boots Alliance	0.75	0.79	0.77	9.94	2.48	10.13	10.70	10.42
West Pharmaceutical Services Inc	0.85	0.77	0.81	9.94	2.48	10.53	11.00	10.77
Mean			0.81			10.54 %	11.01 %	10.78 %
Median			0.82			10.63 %	11.08 %	10.85 %
Average of Mean and Median			0.82			10.59 %	11.05 %	10.82 %

Notes:
(1) From Schedule DWD-5, note 1.
(2) From Schedule DWD-5, note 2.
(3) Average of CAPM and ECAPM cost rates.
(4) Results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on February 26, 2021 (1) (millions)	[1] (times larger)	[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	Community Utilities of Pennsylvania, Inc.	$ 36.935		10	5.01%	
2.	Proxy Group of Seven Water Companies	$ 6,259.961	169.5 x	4	0.75%	4.26%

	[A] Decile	[B] Market Capitalization of Smallest Company (millions)	[C] Market Capitalization of Largest Company (millions)	[D] Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,025.803	$ 1,966,078.882	-0.22%
	2	13,178.743	28,808.073	0.49%
	3	6,743.361	13,177.828	0.71%
	4	3,861.858	6,710.676	0.75%
	5	2,445.693	3,836.536	1.09%
	6	1,591.865	2,444.745	1.37%
	7	911.586	1,591.765	1.54%
	8	451.955	911.103	1.46%
	9	190.019	451.800	2.29%
Smallest	10	2.194	189.831	5.01%

*From Duff & Phelps Cost of Capital Navigator,
CRSP Size Premia as of 12/31/2020

Notes:

(1) From page 2 of this Schedule.
(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 4.26% in Column [4], Line No. 2 is derived as follows 4.26% = 5.01% - 0.75%.

Community Utilities of Pennsylvania, Inc.
Market Capitalization of Community Utilities of Pennsylvania, Inc. and the
Proxy Group of Seven Water Companies

	Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2019 (millions)	[2] Book Value per Share at Fiscal Year End 2019 (1)	[3] Total Common Equity at Fiscal Year End 2019 (millions)	[4] Closing Stock Market Price on February 26, 2021	[5] Market-to-Book Ratio on February 26, 2021 (2)	[6] Market Capitalization on February 26, 2021 (3) (millions)
	Community Utilities of Pennsylvania, Inc.		NA	NA	$ 10.678 (4)	NA		
	Based upon Proxy Group of Seven Water Companies						345.9 (5)	$ 36.935 (6)
	Proxy Group of Seven Water Companies							
AWR	American States Water Company	NYSE	36.847	$ 16.325	$ 601.530	$ 73.050	447.5 %	$ 2,691.645
AWK	American Water Works Company, Inc.	NYSE	180.813	33.853	6,121.000	141.880	419.1	25,653.730
CWT	California Water Service Group	NYSE	48.532	16.070	779.906	54.950	341.9	2,666.844
WTRG	Essential Utilities, Inc.	NYSE	220.759	17.580	3,880.860	42.060	239.2	9,285.112
MSEX	Middlesex Water Company	NASDAQ	17.434	18.572	323.792	68.670	369.8	1,197.193
SJW	SJW Group	NYSE	28.457	31.275	889.984	62.680	200.4	1,783.654
YORW	York Water Company	NASDAQ	13.015	10.310	134.185	41.610	403.6	541.550
	Average		77.979	$ 20.569	$ 1,818.751	$ 69.271	345.9 %	$ 6,259.961

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.
(4) Company requested rate base multiplied by Company requested equity ratio.
(5) The market-to-book ratio of Community Utilities of Pennsylvania, Inc. on February 26, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Seven Water Companies on February 26, 2021 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2019 Annual Forms 10K
Bloomberg Financial Services

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025206
	:	
Community Utilities of Pennsylvania Inc. – Water Division	:	
	:	
Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025207
	:	
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
DYLAN W. D'ASCENDIS
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, Dylan W. D'Ascendis, hereby certify that I am a Partner of ScottMadden, Inc., and that, in such capacity, I have been retained by Community Utilities of Pennsylvania, Inc. ("CUPA") as an expert witness in the above-captioned matter for the purposes of providing testimony on CUPA's behalf.

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

<u>For Community Utilities of Pennsylvania Inc. Water and Wastewater Divisions</u>

- Direct Testimony, CUPA Statement No. 5 consisting of 45 pages of written testimony with accompanying exhibits including:
    - Appendix A, and
    - CUPA Exhibit DWD Schedules DWD-1, DWD-2, DWD-3, DWD-4, DWD-5, DWD-6, DWD-7, and DWD-8

- Rebuttal Testimony, CUPA Statement No. 5-R consisting of 53 pages of written testimony with accompanying exhibits:
    - CUPA Exhibit DWD Schedules DWD-1R, DWD-2R, DWD-3R, DWD-4R, DWD-5R, DWD-6R, DWD-7R, and DWD-8R
- Rejoinder Testimony, CUPA W Statement No. 5-RJ consisting of 18 pages of written testimony.

I certify that the facts set forth in the testimony are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021

Dylan W. D'Ascendis
Partner
ScottMadden, Inc.

CUPAW STATEMENT NO. 6

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
(Water Utility)

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

DIRECT TESTIMONY

OF

SCOTT A. MILLER

SPONSORING EXHIBITS CUPAW EX SAM-1, CUPAW EX SAM-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025206

Direct Testimony of Scott A. Miller

INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Scott A. Miller and my business address is 8365 Keystone Crossing, Suite 300, Indianapolis, Indiana 46240-0458.

Q. WHAT IS YOUR PROFESSION AND FOR WHOM ARE YOU EMPLOYED?

A. I am a Certified Public Accountant and a partner in the firm of Baker Tilly Municipal Advisors, LLC ("BTMA"). BTMA began operations on March 1, 2019, as the result of a three-way business combination between my prior firm, H.J. Umbaugh & Associates, Certified Public Accountants, LLP ("Umbaugh"), and Baker Tilly Virchow Krause, LLP which is now doing business as Baker Tilly US, LLP ("Baker Tilly"). One month later, the third firm, Springsted, Inc. joined BTMA. BTMA is a registered municipal advisor and controlled subsidiary of Baker Tilly, an accounting firm. I have included my curriculum vitae as CUPAW Ex. SAM-2.

Q. CAN YOU DESCRIBE YOUR FIRM AND ITS AREA OF EXPERTISE?

A. Baker Tilly US, LLP is a national full-service advisory, tax, and assurance firm of nearly 4,500 professionals across the country. In addition, the firm is an independent member of Baker Tilly International, the world's 10th largest network made up of 126 independent accounting and business services firms in 145 territories, with 34,000 professionals. Baker

Tilly has a long history advising public sector clients and has a particular focus on the energy and utility industry having advised more than 600 energy and utility organizations in the United States. Our public sector practice area is comprised of a dedicated group of professionals who specialize in providing an array of services to public sector entities including utilities. As part of our public sector, BTMA has a concentrated focus on delivering municipal advisory services to governmental entities. A large portion of this practice includes accounting studies in connection with changes in utility rates and financial planning associated with the issuance of tax-exempt and taxable bonds and notes and other evidences of indebtedness. In accordance with rules promulgated by the Municipal Securities Rulemaking Board ("MSRB"), BTMA is registered as a Municipal Advisor with the Securities and Exchange Commission ("SEC").

Q. WHAT IS YOUR EDUCATIONAL EXPERIENCE?

A. In June 1995, I received a Bachelor of Science Degree from the Indiana University Kelley School of Business in Bloomington, Indiana. Since then I have completed various professional courses sponsored by the American Institute of Certified Public Accountants, the Indiana CPA Society and other professional organizations including the American Water Works Association ("AWWA") and the American Public Power Association ("APPA"). In 1998 I completed the AWWA cost of service and rate-making seminar. In 2010, I completed the APPA Intermediate and Advanced Utility Cost of Service and Retail Rate Design seminars.

Q. PLEASE DESCRIBE YOUR RELEVANT PROFESSIONAL EXPERIENCE.

A. I joined the firm of Umbaugh in June 1995 and, in 1998, completed the requirements to become licensed as a Certified Public Accountant in the State of Indiana. In July 2000 I assumed the position of client manager within Umbaugh. On July 1, 2005, I became a principal in Umbaugh and on January 1, 2009, I was admitted into Umbaugh's partnership. From 2015 through 2017, I served on Umbaugh's Management Committee and was responsible for overseeing the operations of the Firm's Accounting Service Group. From 2018 until February 28, 2019, I served on Umbaugh's Executive Committee responsible for the strategic direction of the Firm. As a result of the combination with Baker Tilly and Springsted, I became a partner in Baker Tilly on March 1, 2019. Since the business combination and the creation of BTMA, I have served on the Public Sector Senior Leadership Team which is tasked with developing and implementing the overall strategy of the Firm's Public Sector practice area.

Over the past twenty-six years, I have been involved with many professional engagements including financial studies for municipally owned water, electric, gas, steam and sewage utilities, for-profit and not-for-profit water and wastewater corporations, water authorities, regional water and wastewater districts and conservancy districts. These studies quite often have involved the determination of utility revenue requirements, cost of service studies, rate design and the financial planning associated with the issuance of tax-exempt and taxable bonds and notes to fund projects using a variety of financing mechanisms including USDA Rural Development ("RD"), State Revolving Funds ("SRF"), tax-exempt and taxable bonds issued on the open market and other sources. I have given speeches and participated in panels and workshops concerning utility rates, financing and project

development before the Indiana Rural Water Association, the Alliance of Indiana Rural Water, the Indiana Section of the American Water Works Association, the Indiana Association of Wastewater Companies, the Indiana Water Environment Association, Accelerate Indiana Municipalities (formerly the Indiana Association of Cities and Towns) and the APPA. In May 2016 I received my municipal advisor representative qualification by passing the newly-created Series 50 examination promulgated by the Municipal Securities Rulemaking Board (the "MSRB") and the Securities and Exchange Commission (the "SEC").

Q. WHAT PROFESSIONAL ORGANIZATIONS ARE YOU ASSOCIATED WITH?

A. I am personally a member of the American Institute of Certified Public Accountants, The Indiana CPA Society, the Indiana Water Environment Association and the American Water Works Association ("AWWA") and our firm is a member of numerous accounting and utility industry associations including the Indiana Rural Water Association, the Alliance of Indiana Rural Water as well as the Indiana Municipal Electric Association. Our firm is also a strategic partner of AIM. In the latter capacity, we provide guidance on financial matters that affect communities across Indiana. Finally, I currently serve as the chairman of the Indiana Section AWWA Water Utility Council.

Q. HAVE YOU TESTIFIED BEFORE AS AN EXPERT WITNESS?

A. Yes, I have testified before the Pennsylvania Public Utility Commission and the Indiana Utility Regulatory Commission as well as numerous local government boards and councils on many previous occasions. This testimony has covered the development of appropriate

revenue requirements, utility valuation, financing approval and across-the-board and cost of service analysis and rate design.

OVERVIEW OF TESTIMONY AND EXHIBIT

Q. WAS YOUR FIRM RETAINED BY COMMUNITY UTILITIES OF PENNSYLVANIA, INC. ("CUPA" OR "COMPANY") IN CONNECTION WITH THESE PROCEEDINGS?

A. Yes. We were retained by CUPA to prepare consolidated state-wide cost of service studies for the Company's water and wastewater divisions. These analyses were then used as a basis to make recommendations regarding changes in the Company's present schedules of rates and charges for water and wastewater service.

Q. HAVE THE RESULTS OF YOUR ANALYSIS BEEN SUMMARIZED IN A WRITTEN REPORT?

A. Yes. Our firm prepared a Special Purpose Accounting Report dated April 12, 2021 summarizing the results of our studies for the Company's water divisions. A similar report was prepared for the Company's wastewater divisions and will be submitted with my testimony regarding the wastewater division. These reports were both subsequently revised on May 17, 2021.

Q. PLEASE IDENTIFY CUPAW EXHIBIT SAM-1.

A. CUPAW Exhibit SAM-1 is a copy of our Accounting Report summarizing the results of the accounting services performed for CUPA's water divisions.

Q. WAS THE ACCOUNTING REPORT PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. Yes.

Q. PLEASE EXPLAIN HOW YOUR TESTIMONY AND THE ACCOUNTING REPORT ARE ORGANIZED.

A. My testimony is organized as follows:

I. Introduction and Qualifications

II. Overview of Testimony and Exhibit

III. Cost of Service Methodology

A. Water

IV. Consolidated Cost of Service and Rate Design

A. Water Utility

The Accounting Report is divided into two sections. The first section of the report is the accountant's letter which describes that the Accounting Report is a special purpose report for submission to the Pennsylvania Public Utility Commission and is restricted to that purpose only. This letter is incorporated by reference on all the pages of the Accounting Report.

The second section of the report (pages 2 - 16) presents the consolidated cost of service analysis and resulting rates and charges for the Company's water divisions. In addition, a comparison of the Company's present water rates for each service territory and the calculated cost of service rates are shown.

COST OF SERVICE METHODOLOGY

Q. MR. MILLER, WOULD YOU PLEASE DESCRIBE THE GENERAL PURPOSE OF A COST OF SERVICE STUDY?

A. A cost of service study is a detailed analysis of the cost drivers that influence the provision of service to a utility's customers. The goal of the study is to determine the appropriate level of cost recovery allocable to each customer class. The cost of service study is normally done in conjunction with and leads to the creation of a rate design that recovers costs from the appropriate customer class as closely as possible to the allocated cost of service.

Q. ARE THERE DIFFERENT ACCEPTED METHODOLOGIES OF CONDUCTING A COST OF SERVICE STUDY THAT ARE EMPLOYED IN PRACTICE AND IF SO, WHICH DID YOU USE FOR THIS CASE?

WATER

A. Yes, there are different accepted methodologies. For purposes of allocating costs to the customer classes and designing proposed rates for the Company's water utility, I have employed the Base-Extra Capacity method promulgated by the American Water Works Association ("AWWA") in its seventh edition of *Principles of Water Rates, Fees and Charges* (the "M1 Manual").

The Base-Extra Capacity method is built upon the allocation of both the utility's investment in plant and its proposed revenue requirements to the various functional cost categories of the utility. These functional cost categories include base, extra capacity, customer and direct fire protection. Base or average day capacity costs reflect items that vary based upon

the amount of water used under average usage conditions. Extra capacity costs are usually divided between maximum day and maximum hour and include those costs that are designed to meet demands in excess of the average day and maximum day respectively. As the name implies, customer costs generally vary based upon the number of customers connected to the system and are usually divided between meter costs and billing costs. Finally direct fire protection includes those costs that are incurred in order to not only maintain fire hydrants within the system but also to provide for a portion of the cost recovery of the system oversizing that is required to provide sufficient flows and pressures in order to adequately address a fire event.

Once the costs have been allocated to the functional categories, they are assigned to the various customer classes based upon each customer class' usage characteristics and their associated responsibility for those costs. After the cost responsibility for each customer class has been determined a rate structure can then be designed that appropriately recovers those costs.

Q. WHAT IS THE SOURCE OF THE DATA USED TO PREPARE YOUR REPORT?

A. The utility specific data used for the preparation of the cost of service study was provided to me by CUPA's Financial Analyst II and witness Mr. David Clark and Financial Planning & Analysis Manager and witness Mr. Perry Brown. The data comprises information from the Company's billing and accounting systems as well as other records maintained by CUPA and include historical billing data, plant and investment values, operating statistics and other similar information for the control period used which was the twelve months ended December 31, 2020. In addition, Mr. Clark and Mr. Brown provided to me the pro

forma revenue requirements for which CUPA is seeking approval for the consolidated water territories as well as the pro forma customer count and anticipated water consumption based on the Company's forward-looking test year the twelve months ending December 31, 2022.

CONSOLIDATED COST OF SERVICE AND RATE DESIGN

Water Utility

Q. MR. MILLER, WOULD YOU PLEASE EXPLAIN MORE FULLY THE DETAILS OF THE REPORT AND YOUR COST OF SERVICE AND RATE DESIGN CALCULATIONS FOR THE CONSOLIDATED WATER TERRITORIES?

A. The second section of the report, beginning on page 2 contains the consolidated cost of service analysis for the CUPA water territories. Each of the revenue requirements are first allocated to the functional cost categories, and then assigned to each customer classification based upon each of the classes' responsibility for those functional costs. The allocated cost of service for each customer classification is then used as a basis for developing the proposed rates and charges.

Page 2 shows the Company's usage characteristics by summarizing control period billings, including monthly base facility charges and volume charges as well as existing fire protection charges and availability fees. When the individual billing determinant components are multiplied by the existing rates and charges and compared with recorded revenue, the consumer analysis control period variance is only 1.09%. This small variance indicates that the analysis and the underlying billing determinants are statistically valid for rate-making purposes.

Page 3 presents the calculation of the pro forma equivalent meters. Control period bills were normalized to reflect a conversion to monthly billing for Penn Estates availability fee customers and Tamiment 5/8 inch and availability fee customers. In addition, slight adjustments were made to the number of bills to reflect the anticipated number of active customer accounts on a going forward basis and to eliminate billing inconsistencies and rounding errors. The resulting normalized annual bills column reflects the inclusion of twelve monthly bills from each active customer account on a going forward basis. Next, the normalized annual bills are multiplied by the appropriate equivalency factor to arrive at pro forma equivalent connections. The equivalency factors used are those followed in the M1 Manual.

Summarized on page 4 is the calculation of the pro forma gallons sold for the forward-looking test year the twelve months ending December 31, 2022. To arrive at these figures, the normalized control period consumption, which reflects billing adjustments applied during the control period, was adjusted to reflect the consumption trend factors calculated for each customer class. These trend factors were provided by Mr. Brown and Mr. Clark and are discussed in more detail in their direct testimony.

Also summarized on page 4 of the report are the pro forma units of service for each customer classification based upon information extracted from the Company's billing records for the control period and adjusted for capacity factors as calculated using AWWA methodologies. The Company has just one customer classification. The column entitled "Pro Forma Annual Sales" reflects the anticipated billed consumption for all customers for the forward-looking test year.

The average daily demand has been multiplied by the imputed capacity factor to determine the extra capacity volumes associated with meeting maximum day demands and maximum hour demands for service. For instance, the total maximum day demand has been calculated at 612,900 gallons per day. This exceeds the average day demand of 408,600 gallons and results in extra maximum day capacity requirements of 204,300 gallons. The maximum hour demand has been calculated at a rate of 919,400 gallons per day. This capacity exceeds the average daily demands of 408,600 gallons and the extra capacity for maximum day demands of 204,300 gallons resulting in extra capacity requirements for maximum hour demands of 306,500 gallons.

Q. YOU MENTIONED THAT YOU IMPUTED SOME OF THE CAPACITY FACTORS. WOULD YOU PLEASE EXPLAIN THE NATURE OF THE CAPACITY FACTORS AND HOW YOU ARRIVED AT THE FIGURES PRESENTED?

A. Unlike large utilities, it did not seem prudent for CUPA, with its relatively small service territories, to incur the cost of a detailed customer class capacity factor study. Instead, the M1 Manual provides a detailed description regarding methodologies for calculating capacity factors. In this case, I employed the methodology described to determine noncoincident capacity factors for each customer class. Generally, this methodology works well for smaller utilities but in some cases, because of a lack of data, certain inferences must be made based upon sound rate-making principles and practitioner experience. These capacity factors are the foundation upon which the allocations of cost are made. The maximum day capacity factors reflect the relationship of each customer class' maximum day requirements to its average day requirements. Likewise, the maximum hour capacity

factors reflect the relationship of each customer class' maximum hour requirements to its average usage. In cases such as this with only one customer class, the process is streamlined. For example, page 4 shows that the calculated capacity factor of 150 results in expected maximum day total capacity needs of 612,900 gallons which is 150% or 1.50 times the actual average day requirement of 408,600. Similarly, the calculated maximum hour total capacity of 919,400 gallons is 2.25 times the actual average day requirement of 408,600 gallons.

As is often the case, CUPA does not track its maximum hour rate of customer demand. This amount, however, figures into the calculation of capacity factors. In these situations, we impute an appropriate value based upon the design limits of various components of the system such as wells, high service pumps, filters or other capacity restricted infrastructure. The goal of these calculations is to produce capacity factors that are reasonable and that are ideally within the acceptable tolerance limits discussed in the M1 Manual.

Q. PLEASE CONTINUE WITH THE EXPLANATION OF YOUR REPORT.

A. The number of bills for each customer classification was obtained directly from the billing records of the Company and was normalized to reflect twelve monthly bills for each active account and was subsequently used as a basis for allocating customer costs related to billing. The number of connections for each customer classification has been weighted by equivalency factors to equate larger size meters to a standard residential 5/8-inch water meter. These calculations are shown on page 3 of the report. The equivalent connections for each customer classification are used as a basis for allocating customer related costs

associated with meters and services. The ratios developed using the units of service data are summarized on page 4 of the report and are used for subsequent allocations.

The next several pages of the report detail the allocation of the Company's investment in plant and the pro forma costs to the functional cost categories and ultimately lead to an appropriate rate design. On pages 5 through 7 of the report, the Company's pro forma rate base as of December 31, 2022 has been allocated to the various functional cost categories.

Pages 8 and 9 of the report present the allocation of the pro forma annual operation and maintenance expenses to each of the functional cost categories.

On page 10 the pro forma unit costs of service, as allocated to each of the functional cost categories on the preceding pages, are divided by the units of service as calculated on page 4 to arrive at the pro forma cost of service per unit. For example, page 10 of the report shows $656,775 of net operation and maintenance expenses, $89,833 of interest on debt, $143,870 of depreciation, $30,401 of taxes other than income, $44,564 of federal income taxes and $23,553 of state income taxes, $167,646 of return on rate base and $29,584 of total reductions for amortization expense have been allocated to the base cost of service. After deducting miscellaneous revenues of $3,993, a total of $1,123,065 of pro forma costs of service to be recovered through rates is allocable to base cost. Dividing these allocated base costs by the anticipated forward-looking test year gallons results in a pro forma annual base cost of service of $7.5295 per unit of service, in this case 1,000's of gallons. Similar calculations have been made for the extra capacity costs, customer costs and direct fire protection service.

On page 11, the cost of service per unit is then applied to the corresponding units for each customer classification as developed on page 4 to arrive at each customer classes' responsibility for those functional costs. In this particular case, since there is only one customer class, the allocated costs simply carry forward from the prior page.

Page 12 calculates the monthly base charge by meter size. The base and meter cost per unit is adjusted based on the appropriate equivalency factor for each meter size and then added to the billing cost per unit to arrive at the monthly base charge.

Page 13 shows the calculation of the monthly charge per equivalent fire hydrant based on the previous cost allocations. In this case, the total allocated costs of $176,972 are divided by the 744 equivalent hydrant connections to arrive at a monthly rate of $237.90. Not unexpectedly, the calculated rate for fire protection service is significantly higher than the existing rate. My experience in other cost of service studies frequently results in a similar outcome. Several years ago, the calculations associated with the allocation of fire protection costs in the M1 manual were revised. The effect of these revisions, in my experience, is the allocation of significantly more cost to fire protection than in the past. I believe this shift is appropriate and reflects a more accurate measure of the true cost of providing this type of service. The outcome, however, can be extreme and lead to rate shock. In an effort to mitigate the impact, CUPA's Business Economist and witness, Mr. Andrew Dickson, has modified the rates calculated in the cost of service study to achieve a more practical implementation of the proposed revenue increase. These considerations are described in more detail in his testimony.

Page 14 of the report shows the calculation of the pro forma annual revenues at the proposed rates and charges. For many systems, it is typical that we would propose a three-tier declining block rate structure after analyzing the subject utility's water usage by customer class. Specifically, the first block would be set at a level to capture approximately 90% to 95% of the residential sales. The second tier would be established to capture all remaining residential and smaller commercial sales as well as 90% to 95% of large commercial sales. The bottom or tail block is then established for the remaining larger commercial and industrial consumption.

Because of the Company's relatively homogenous customer base made up of mostly residential and residential-like consumption patterns, the need for a declining block rate structure to temper the rate impact to large volume customers is not necessary. Therefore, we have determined that it is appropriate, in this case, to continue the Company's current single tier system with all consumption priced at a proposed rate per 1,000 gallons of $12.76. As can be seen on page 14, the proposed volumetric rate block and base charges are estimated to produce revenues of $2,817,707 resulting in a variance to revenue requirements of $143 or 0.01%.

Page 15 of the report compares the proposed cost of service as determined on page 14 with the normalized annual revenue generated under the existing rates and charges and revenue generated under the adjusted rates for the system.

For the Company to achieve the allocated cost-based targets compared to control period revenues, average revenues would be increased approximately 34.43%.

Page 16 of the report summarizes the present and calculated water rates and charges. The calculated rates for all customers consist of a volumetric rate and a monthly service charge based on the customer's meter size. All recurring monthly rates have been adjusted to reflect the calculated cost-based increase. As I mentioned a moment ago, Mr. Dickson uses the calculated cost of service based rates as a starting point to determine the actual proposed rates that CUPA is suggesting be implemented. Mr. Dickson's considerations are described in his testimony and include the avoidance of rate shock and the principal of gradualism.

Q. HOW WAS THE PROPOSED AVAILABILITY FEE CALCULATED?

A. Consistent with the calculations in CUPA's last cost of service study and rate case, we used 0.45 as the equivalency factor for the availability fee on page 3 of the report which results in 21 equivalent availability fee billing units in Penn Estates and 148 equivalent availability fee billing units in Tamiment that were then incorporated throughout the cost of service allocations. After the completion of the cost of service allocations, we set the proposed availability fee at a level that would continue the same relative 45 percent difference in an average monthly bill and the proposed availability fee. Specifically, we selected an average bill of 4,137 gallons at calculated rates of $67.59. Forty-five percent of this amount is $30.40 and represents the calculated availability fee. We used the 4,137 average based on historical usage in Penn Estates as shown on page 2 of the report (83,373,565 gallons divided by 20,152 bills).

Q. MR. MILLER DOES THAT CONCLUDE THE EXPLANATION OF YOUR CALCULATIONS OF ALLOCATED COST OF SERVICE AND RATE DESIGN FOR CUPA CONSOLIDATED WATER SERVICE?

A. Yes, it does.

Q. DOES THIS CONCLUDE THE EXPLANATION OF THE ACCOUNTING REPORT?

A. Yes, it does.

Q. MR. MILLER IS IT YOUR UNDERSTANDING THAT CUPA WOULD LIKE TO CONTINUE CONSOLIDATED WATER RATES FOR ITS SERVICE TERRITORIES IN PENNSYLVANIA INCLUDING THE ADDITION OF TAMIMENT?

A. Yes. That is my understanding.

Q. DO YOU HAVE AN OPINION REGARDING THE IMPLEMENTATION OF CONSOLIDATED RATES?

A. Yes. This practice is not new and was supported by the Commission in CUPA's prior rate proceeding. In my opinion, to a reasonable degree of accounting certainty, under the conditions within which the Company operates, consolidated rates appear reasonable for the individual service territories. On their own, each service territory is relatively small and lacks the economies of scale that could ultimately result in savings to the customers. Continuing the consolidated rates mirrors the overall ownership and operation of the different units and more closely matches the allocation of costs to the service areas.

Q. IS IT YOUR OPINION THAT THE CONSOLIDATED WATER RATES PROPOSED IN YOUR ACCOUNTING REPORT ARE FAIR, JUST, NON-DISCRIMINATORY AND REASONABLE AND NECESSARY TO MEET THE PROJECTED REVENUE REQUIREMENTS OF THE UTILITY?

A. Yes, it is my opinion to a reasonable degree of accounting certainty that the consolidated water rates proposed in my accounting report, CUPAW EX SAM-1, are fair, just, non-discriminatory and reasonable and necessary to meet the projected revenue requirements of the utility.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY IN THIS CAUSE?

A. This concludes my direct testimony at this time.

CUPA W Exhibit SAM-1

CUPAW EX SAM-1 (Revised)

Petitioner's Attachment SAM-1 (Revised)

Docket Number
R-2021-3025206

Community Utilities of Pennsylvania, Inc.

Accounting Report On
Water Utility
Cost of Service Study and Rate Design

May 17, 2021

bakertilly

Indianapolis, Indiana

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May 17, 2021

ACCOUNTANTS' SPECIAL PURPOSE REPORT

Community Utilities of Pennsylvania, Inc.
2335 Sanders Road
Northbrook, IL 60062

RE: Water Utility (the "Utility")
Cost of Service Study and Rate Design

In connection with the proposed adjustment in the Utility's schedules of Water rates and charges, we have, at your request, compiled this special purpose report for submission to the Pennsylvania Public Utility Commission.

This special purpose cost of service study report has been prepared for the purpose of requesting approval of new schedules of Water rates and charges from the Pennsylvania Public Utility Commission and should not be used for any other purpose.

Further, the pro forma financial information in this report which has not been compiled, reviewed or audited by us, is based upon unaudited financial information for the twelve months ending December 31, 2022, which was compiled by management as well as assumptions provided by management and their consultants or obtained from other sources. This pro forma financial information is prepared for the purpose of showing the cost of providing Water service to the various customer classes of the Utility as well as for designing a rate structure to recover these costs from the Utility's customer classes. The actual results achieved may vary from the pro forma information and the variations may be material. We have no responsibility to update this report for events and circumstances occurring after the date of this report.

Baker Tilly Municipal Advisors, LLC

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COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

SUMMARY OF CONTROL PERIOD CONSUMER STUDY FOR WATER SERVICES
(For the 12 Months Ended December 31, 2020)

		Number of Bills	Billed Consumption (Gallons)	Rate (1)	Revenues
Base Facility Charge:					
Westgate:					
5/8	inch meter	11,662		$17.25	$201,170
1	inch meter	48		43.13	2,070
1 1/2	inch meter	12		86.25	1,035
2	inch meter	36		138.00	4,968
	Sub-total	11,758			209,243
Penn Estates:					
5/8	inch meter	20,140		$17.25	347,415
1	inch meter	12		43.13	518
	Sub-total	20,152			347,933
Tamiment:					
5/8	inch meter (quarterly)	2,664		$54.55	145,321
6	inch meter	24		121.25	2,910
	Sub-total	2,688			148,231
Volume Charge: per 1,000 gallons					
Westgate:					
	All Flow		49,042,091	$9.28	455,111
Penn Estates:					
	All Flow		83,373,565	$9.28	773,707
Tamiment:					
	All Flow		23,773,433	$5.13	121,958
Westgate Fire Protection		744		$33.42 (2)	24,864
Penn Estates Availability Fee		182		56.43	10,270
Tamiment Availability Fee		1,312		19.14	25,112
Billing Adjustments From Billing System			(1,743,844)		(20,254)
	Totals	39,524	154,445,245		$2,096,175
Control Period (Calendar Year 2020)					$2,073,600
Variance					$22,575
Percent Variance					1.09%

(1) Current rates effective January 1, 2020 per Supplement No. 8 to Tariff Water-Pa. P.U.C. No. 1
(2) Fire Protection is billed $33.42 per month per hydrant (62 hydrants)

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

CALCULATION OF PRO FORMA EQUIVALENT METERS
(Based upon control period service charge billings)

Meter Size	Control Period Bills	Adjustment (1)	Normalized Annual Bills	Average Connections	Equivalency Factor (2)	Equivalent Meters and Services
Westgate:						
5/8"	11,662	-	11,662	972	1.00	972
1"	48	-	48	4	2.50	10
1 1/2"	12	-	12	1	5.00	5
2"	36	-	36	3	8.00	24
Penn Estates:						
5/8"	20,140	-	20,140	1,678	1.00	1,678
1"	12	-	12	1	2.50	3
Availability Fee	547	-	547	46	0.45	21
Tamiment:						
5/8"	2,664	5,256	7,920	660	1.00	660
6"	24		24	2	50.00	100
Availability Fee	1,312	2,624	3,936	328	0.45	148
Totals	36,457	7,880	44,337	3,695		3,621

(1) To adjust control period billings to reflect pro forma bills. No growth adjustment has been included. Tamiment billings have been converted to monthly billings.

(2) Equivalent meter capacity ratios per the seventh edition of the American Water Works Association ("AWWA") Principles of Water Rates, Fees and Charges Manual of Water Supply Practices M1 (the "M1 Manual").

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

PRO FORMA UNITS OF SERVICE
Base-Extra Capacity Method

	Base		Maximum Day			Maximum Hour			Customer	
Customer Class	Pro Forma Annual Sales (1)	Average Day (2)	Capacity Factor (3) %	Total Capacity (2)	Extra Capacity (4) (2)	Capacity Factor %	Total Capacity (3) (2)	Extra Capacity (5) (2)	Equivalent Connections	Bills
All Customers	149,155.1	408.6	150	612.9	204.3	225	919.4	306.5	3,621	44,337

(1) 1,000's of gallons. Normalized as follows

	1,000's gallons
Total control period sales	154,445.2
Less pro forma reduction - 2020 (6)	(3,187.7)
Estimated pro forma 2021 sales	151,257.5
Less pro forma reduction - 2021 (6)	(2,102.4)
Estimated pro forma 2022 sales	149,155.1

(2) 1,000's of gallons per day.
(3) Calculated based on control period usage data.
(4) Capacity in excess of average day usage.
(5) Capacity in excess of maximum day demand.
(6) Management assumes a 1.39% reduction in water sales.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

ALLOCATION OF RATE BASE TO FUNCTIONAL COST COMPONENTS
Base-Extra Capacity Method

	Pro Forma Rate Base 12/31/22	Base	Extra Capacity Maximum Day	Extra Capacity Maximum Hour	Customer Meters and Services	Direct Fire Protection Service	Percentage Allocations BAS	MXD	MXH	CUS	FP	Ref.
Source of Supply Plant:												
Structures and improvements	$517,124	$517,124					100.00%					(1)
Wells and springs	854,586	854,586					100.00%					(1)
Supply mains	134,378	134,378					100.00%					(1)
Power generation equipment	1,056	1,056					100.00%					(1)
Pumping equipment	200,289	200,289					100.00%					(1)
Water Treatment:												
Structures and improvements	269,620	179,756	$89,864				66.67%	33.33%				(2)
Pumping equipment	401,273	267,529	133,744				66.67%	33.33%				(2)
Water treatment equipment	146,869	97,918	48,951				66.67%	33.33%				(2)
Other plant and miscellaneous	1,260	840	420				66.67%	33.33%				(2)
Transmission and Distribution:												
Structures and improvements	15,466	6,873	3,437	$5,156			44.44%	22.22%	33.34%			(3)
Pumping equipment	9,795	4,353	2,176	3,266			44.44%	22.22%	33.34%			(3)
Distribution reservoirs and standpipes	1,853,537	185,354		1,668,183			10.00%		90.00%			(4)
Transmission and distribution mains	5,780,564	2,568,883	1,284,441	1,927,240			44.44%	22.22%	33.34%			(3)
Services	924,723				$924,723					100.00%		(5)
Meters and meter installations	964,263				964,263					100.00%		(5)
Hydrants	921,561					$921,561					100%	(6)
Backflow prevention devices	232				232					100.00%		(5)
General Plant:												
Organization	235,119	91,203	28,191	65,010	34,092	16,623	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Franchises	6,608	2,563	792	1,827	958	468	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Land and land rights	44,950	17,435	5,390	12,429	6,518	3,178	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Structures and improvements	516,059	200,180	61,875	142,690	74,829	36,485	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Office furniture and equipment	62,487	24,239	7,492	17,278	9,061	4,417	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Computer equipment	200,367	77,723	24,024	55,401	29,053	14,166	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Transportation equipment	229,487	89,018	27,515	63,453	33,276	16,225	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Miscellaneous equipment	17,324	6,720	2,077	4,790	2,512	1,225	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Stores equipment	621	241	74	172	90	44	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Tools, shop and garage equipment	213,106	82,664	25,551	58,924	30,900	15,067	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Laboratory equipment	35,528	35,528					100.00%					(1)
Power operated equipment	42,056	16,314	5,043	11,628	6,098	2,973	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Communication equipment	247,126	95,861	29,630	68,330	35,833	17,472	38.79%	11.99%	27.65%	14.50%	7.07%	(7)
Gross Plant in Service	14,847,434	5,758,628	1,780,687	4,105,777	2,152,438	1,049,904	38.79%	11.99%	27.65%	14.50%	7.07%	
Accumulated Depreciation	(4,893,084)	(1,943,881)	(583,511)	(1,482,924)	(677,697)	(205,071)	38.79%	11.99%	27.65%	14.50%	7.07%	(8)
Net Plant in Service	9,954,350	3,814,747	1,197,176	2,622,853	1,474,741	844,833	38.31%	12.03%	26.35%	14.82%	8.49%	
Cash Working Capital	200,349	76,753	24,102	52,792	29,692	17,010	38.31%	12.03%	26.35%	14.82%	8.49%	(9)
Net Contributions in Aid of Construction	(1,234,996)	(548,832)	(274,416)	(411,748)	-	-	44.44%	22.22%	33.34%			(3)
Accumulated Deferred Income Taxes	(454,825)	(174,244)	(54,715)	(119,846)	(67,405)	(38,615)	38.31%	12.03%	26.35%	14.82%	8.49%	(9)
Net Plant Acquisition Adjustment	(719,891)	(275,790)	(86,603)	(189,691)	(106,688)	(61,119)	38.31%	12.03%	26.35%	14.82%	8.49%	(9)
Customer Deposits	(1,442)	(553)	(173)	(380)	(214)	(122)	38.31%	12.03%	26.35%	14.82%	8.49%	(9)
Net Deferred Charges	93,189	35,700	11,211	24,555	13,811	7,912	38.31%	12.03%	26.35%	14.82%	8.49%	(9)
Total Rate Base	$7,836,734	$2,927,781	$816,582	$1,978,535	$1,343,937	$769,899	37.36%	10.42%	25.25%	17.15%	9.82%	

(Continued on next page)

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

(Cont'd)

ALLOCATION OF RATE BASE TO FUNCTIONAL COST COMPONENTS
Base-Extra Capacity Method

	Pro Forma Accumulated Depreciation 12/31/22	Base	Extra Capacity Maximum Day	Extra Capacity Maximum Hour	Customer Meters and Services	Direct Fire Protection Service	Percentage Allocations BAS	MXD	MXH	CUS	FP	Ref.
Source of Supply Plant:												
Structures and improvements	($127,488)	($127,488)					100.00%					(1)
Wells and springs	(432,385)	(432,385)					100.00%					(1)
Supply mains	5,192	5,192					100.00%					(1)
Power generation equipment	(484)	(484)					100.00%					(1)
Pumping equipment	22,652	22,652					100.00%					(1)
Water Treatment:												
Structures and improvements	(36,595)	(24,398)	($12,197)				66.67%	33.33%				(2)
Pumping equipment	(107,150)	(71,437)	(35,713)				66.67%	33.33%				(2)
Water treatment equipment	(51,994)	(34,664)	(17,330)				66.67%	33.33%				(2)
Transmission and Distribution:												
Structures and improvements	(3,275)	(1,455)	(728)	($1,092)			44.44%	22.22%	33.34%			(3)
Pumping equipment	(2,824)	(1,255)	(627)	(942)			44.44%	22.22%	33.34%			(3)
Distribution reservoirs and standpipes	(627,913)	(62,791)		(565,122)			10.00%		90.00%			(4)
Transmission and distribution mains	(1,719,956)	(764,349)	(382,174)	(573,433)			44.44%	22.22%	33.34%			(3)
Services	(228,982)				($228,982)					100.00%		(5)
Meters and meter installations	(292,168)				(292,168)					100.00%		(5)
Hydrants	(157,747)					($157,747)					100%	(6)
Backflow prevention devices	(120)				(120)					100.00%		(5)
General Plant:												
Organization	(109,353)	(43,435)	(13,046)	(33,145)	(15,145)	(4,582)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Franchises	(1,214)	(482)	(145)	(368)	(168)	(51)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Structures and improvements	(116,595)	(46,312)	(13,910)	(35,340)	(16,148)	(4,885)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Office furniture and equipment	(443,116)	(176,006)	(52,864)	(134,308)	(61,372)	(18,566)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Computer equipment	(92,558)	(36,765)	(11,042)	(28,054)	(12,819)	(3,878)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Transportation equipment	(195,591)	(77,689)	(23,334)	(59,284)	(27,089)	(8,195)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Stores equipment	(113)	(45)	(13)	(34)	(16)	(5)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Tools, shop and garage equipment	(128,535)	(51,054)	(15,334)	(38,959)	(17,802)	(5,386)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Laboratory equipment	(2,401)	(2,401)					100.00%					(1)
Power operated equipment	(14,480)	(5,752)	(1,727)	(4,389)	(2,005)	(607)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Communication equipment	(27,891)	(11,078)	(3,327)	(8,454)	(3,863)	(1,169)	39.72%	11.93%	30.31%	13.85%	4.19%	(7)
Accumulated Depreciation	($4,893,084)	($1,943,881)	($583,511)	($1,482,924)	($677,697)	($205,071)	39.72%	11.93%	30.31%	13.85%	4.19%	

(Continued on next page)

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

(Cont'd)

ALLOCATION OF RATE BASE TO FUNCTIONAL COST COMPONENTS
Base-Extra Capacity Method

(1) Allocated 100% to base.

(2) Allocated in ratio to maximum day demand.

	1,000's of Gallons	%
Average day demand	408.6	66.67%
Maximum day excess capacity	204.3	33.33%
Totals	612.9	100.00%

(3) Allocated in ratio to maximum hour demand.

	1,000's of Gallons	%
Average day demand	408.6	44.44%
Maximum day excess capacity	204.3	22.22%
Maximum hour excess capacity	306.5	33.34%
Totals	919.4	100.00%

(4) Allocated 10% to base and 90% to maximum hour.

(5) Allocated 100% to meters and services.

(6) Allocated 100% to direct fire protection.

(7) Allocated pro rata to all other allocable utility plant.

(8) Accumulated depreciation allocated by function, page 6.

(9) Allocated pro rata to net utility plant.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

ALLOCATION OF PRO FORMA OPERATION AND MAINTENANCE EXPENSES
TO FUNCTIONAL COST COMPONENTS
Base-Extra Capacity Method

	Pro Forma Expense	Base	Extra Capacity: Maximum Day	Extra Capacity: Maximum Hour	Customer Class: Meters and Services	Customer Class: Billing and Collecting	Direct Fire Protection Service	Percentage Allocation: BAS	MXD	MXH	MET	BILL	FP	Ref.
Water treatment:														
Salaries and wages	$73,374	$48,918	$24,456					66.67%	33.33%					(1)
Purchased power	106,110	95,499	10,611					90.00%	10.00%					(2)
Purchased water	217,663	145,116	72,547					66.67%	33.33%					(1)
Repairs and maintenance	28,879	19,254	9,625					66.67%	33.33%					(1)
Chemicals	113,899	113,899						100.00%						(3)
Maintenance testing	18,721	12,481	6,240					66.67%	33.33%					(1)
Transportation	5,576	3,718	1,858					66.67%	33.33%					(1)
Operating expense charged to plant	(9,702)	(6,468)	(3,234)					66.67%	33.33%					(1)
Transmission and distribution:														
Salaries and wages	223,753	59,093	27,566	$77,016	$40,365		$19,713	26.41%	12.32%	34.42%	18.04%		8.81%	(4)
Repairs and maintenance	88,064	23,258	10,849	30,312	15,887		7,758	26.41%	12.32%	34.42%	18.04%		8.81%	(4)
Transportation	17,004	4,492	2,093	5,853	3,068		1,498	26.41%	12.32%	34.42%	18.04%		8.81%	(4)
Operating expense charged to plant	(29,585)	(7,812)	(3,647)	(10,183)	(5,337)		(2,606)	26.41%	12.32%	34.42%	18.04%		8.81%	(4)
Customer accounts:														
Office supplies and other expenses	10,007					$10,007						100.00%		(5)
Meter reading	12,104					12,104						100.00%		(5)
Administrative and general:														
Salaries and wages	138,361	50,294	24,228	35,863	18,803	-	9,173	36.35%	17.51%	25.92%	13.59%	0.00%	6.63%	(6)
Office supplies and other expenses	10,991	3,704	1,757	1,655	825	2,608	442	33.70%	15.98%	15.06%	7.51%	23.73%	4.02%	(7)
Regulatory commission expense	36,709	13,714	3,825	9,269	3,148	3,148	3,605	37.36%	10.42%	25.25%	8.58%	8.58%	9.82%	(8)
Pension and other benefits	111,990	40,707	19,611	29,028	15,219	-	7,425	36.35%	17.51%	25.92%	13.59%	0.00%	6.63%	(9)
Insurance	50,734	19,437	6,104	13,368	3,759	3,759	4,307	38.31%	12.03%	26.35%	7.41%	7.41%	8.49%	(10)
Office utilities	24,198	8,155	3,867	3,644	1,817	5,742	973	33.70%	15.98%	15.06%	7.51%	23.73%	4.02%	(7)
Outside services	15,125	5,097	2,417	2,278	1,136	3,589	608	33.70%	15.98%	15.06%	7.51%	23.73%	4.02%	(7)
Miscellaneous	12,518	4,219	2,000	1,885	940	2,971	503	33.70%	15.98%	15.06%	7.51%	23.73%	4.02%	(7)
Corporate Allocation	270,966					270,966						100.00%		(5)
Total net operating expenses	$1,547,459	$656,775	$222,773	$199,988	$99,630	$314,894	$53,399	42.44%	14.40%	12.92%	6.44%	20.35%	3.45%	

(Continued on next page)

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

(Cont'd)

ALLOCATION OF PRO FORMA OPERATION AND MAINTENANCE EXPENSES TO FUNCTIONAL COST COMPONENTS
Base-Extra Capacity Method

(1) Allocated in ratio to maximum day demand.

	1,000's of Gallons	%
Average day demand	408.6	66.67%
Maximum day excess capacity	204.3	33.33%
Totals	$613	100.00%

(2) Allocated 90% to base and 10% to maximum day.

(3) Allocated 100% to base.

(4) Allocated pro rata based on the allocation of total transmission and distribution plant.

	Transmission and Distribution Plant	%
Average day demand	$2,765,463	26.41%
Maximum day excess capacity	1,290,054	12.32%
Maximum hour excess capacity	3,603,845	34.42%
Meters and services	1,889,218	18.04%
Fire protection	921,561	8.81%
Totals	$10,470,141	100.00%

(5) Allocated 100% to billing and collecting.

(6) Allocated pro rata based upon all other payroll.

(7) Allocated pro rata to all other functionalized expenses excluding purchased power and chemicals.

(8) Allocated pro rata based upon rate base.

(9) Allocated pro rata based upon total payroll.

(10) Allocated pro rata based upon net utility plant.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

UNIT COSTS OF SERVICE
(Pro Forma Year Ending 12/31/2022)

	Net Pro Forma Revenue Requirements	Allocable To All Customers						
			Extra Capacity		Customer Costs		Direct Fire Protection Service	Ref
		Base	Maximum Day	Maximum Hour	Meters and Services	Billing and Collecting		
		(-----1,000's of Gallons-----)			Equiv. Meters	Bills		
Units of Service		149,155	204.3	306.5	3,621	44,337	62	(1)
Projected Cost of Service								
Net operation and maintenance expense	$1,547,459	$656,775	$222,773	$199,988	$99,630	$314,894	$53,399	(2)
Interest on debt	240,451	89,833	25,055	60,714	41,237		23,612	(4)
Depreciation	375,543	143,870	45,178	98,956	55,655		31,884	(3)
Taxes other than income	79,357	30,401	9,547	20,911	11,761		6,737	(5)
Income taxes - federal	119,283	44,564	12,429	30,119	20,457		11,714	(4)
Income taxes - state	63,043	23,553	6,569	15,918	10,812		6,191	(4)
Amortization of PAA	(36,069)	(16,029)	(8,015)	(12,025)				(6)
Amortization of CIAC	(30,502)	(13,555)	(6,778)	(10,169)				(6)
Return on rate base	448,732	167,646	46,758	113,305	76,958		44,065	(4)
Total Cost of Service	2,807,297	1,127,058	353,516	517,717	316,510	314,894	177,602	
Less miscellaneous revenue	(9,947)	(3,993)	(1,253)	(1,834)	(1,121)	(1,116)	(630)	(7)
Plus uncollectible accounts	20,501					20,501		(8)
Total Cost of Service to be Recovered Through Rates and Charges	$2,817,851	$1,123,065	$352,263	$515,883	$315,389	$334,279	$176,972	
Total Unit Cost of Service		$7.5295	$1,724.2438	$1,683.1419	$87.1000	$7.5395	$2,854.3871	

(1) See "Pro Forma Units of Service", page 4.
(2) As calculated in "Allocation of Pro Forma Operation and Maintenance Expenses to Functional Cost Components", pages 8 - 9.
(3) Allocated based on net plant in service. See page 5.
(4) Allocated based on rate base. See page 5.
(5) Allocated based on gross plant. See page 5.
(6) Allocated based on Net Contributions in Aid of Construction. See page 5.
(7) Allocated pro rata to total cost of service.
(8) Allocated 100% to Billing and Collecting.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

COST OF SERVICE ALLOCATED TO CUSTOMER CLASS
(Pro Forma Year Ending 12/31/2022)

	Total Costs of Service	Allocable To All Customers					
			Extra Capacity		Customer Costs		Direct Fire Protection Service
		Base	Maximum Day	Maximum Hour	Meters and Services	Billing and Collecting	
		(-----1,000's of Gallons-----)			Equiv. Meters	Bills	Equiv. Hydrants
Unit Costs of Service (1)		$7.5295	$1,724.2438	$1,683.1419	$87.1000	$7.5395	$2,854.3871
Allocated Costs of Service:							
All Customers:							
Units of service		149,155.1	204.3	306.5	3,621	44,337	62
Cost	$2,817,850	$1,123,064	$352,263	$515,883	$315,389	$334,279	$176,972

(1) See page 10.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

CALCULATION OF PROPOSED MONTHLY BASE CHARGES

Meter Size	5/8 inch Equivalency Factor	Meter Cost Per Equiv. Unit (1)	Meter Cost Per Unit	Billing Cost Per Unit (2)	Total	Rounded (Use)
5/8 inch meter	1.0	$7.2583	$7.2583	$7.5395	$14.7978	$14.80
1 inch meter	2.5	7.2583	18.1458	7.5395	25.6853	25.70
1 1/2 inch meter	5.0	7.2583	36.2915	7.5395	43.8310	43.85
2 inch meter	8.0	7.2583	58.0664	7.5395	65.6059	65.60
6 inch meter	50.0	7.2583	362.9150	7.5395	370.4545	370.45

(1) Calculated as follows:

	Meters & Services
Annual charge per equivalent meter (page 11)	$87.1000
Divided by 12 months	12
Monthly charge per equivalent meter	$7.2583

(2) See page 11.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

CALCULATION OF FIRE PROTECTION CHARGES BASED UPON ALLOCATED COST OF SERVICE

Fire Hydrants:

Total costs to be recovered from fire protection, see page 10.	$176,972
Divide by equivalent fire hydrant connections, see page 2.	744
Monthly charge per equivalent hydrant	$237.87
Use (Rounded)	$237.90

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

PRO FORMA ANNUAL OPERATING REVENUE AT ADJUSTED RATES AND CHARGES BASED UPON ALLOCATED COST OF SERVICE

	Percent of Use	Billing Determinants: Pro Forma Consumption (Gallons)	Billing Determinants: Bills	Allocated Cost of Service Rates	Pro Forma Revenue Under Adjusted Rates
All Customers:					
Base Charge:					
5/8 inch meter			39,722	$14.80	$587,886
1 inch meter			60	25.70	1,542
1 1/2 inch meter			12	43.85	526
2 inch meter			36	65.60	2,362
6 inch meter			24	370.45	8,891
Availability Fee			4,483	30.40	136,283
Volume Charge:					
All Flow	100.00%	149,155.1		12.76	1,903,219
Fire Protection			744	237.90	176,998
Totals		149,155.1	45,081		$2,817,707
Control					$2,817,850
Variance					($143)
Percent Variance					-0.01%

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

COMPARISON OF ALLOCATED COST OF SERVICE WITH REVENUE UNDER EXISTING AND ADJUSTED RATES

Customer Classification	Cost of Service	Control Period Revenue Under Existing Rates (1)	Increase/(Decrease) %	Increase/(Decrease) Amount	Cost of Service	Revenue Under Adjusted Rates (2)	Variance Between Adjusted Revenues and Cost of Service %	Variance Between Adjusted Revenues and Cost of Service Amount
All Customers	$2,817,850	$2,096,175	34.43%	$721,675	$2,817,850	$2,817,707	-0.01%	($143)

(1) See page 2.
(2) See page 14.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WATER SERVICES

SCHEDULE OF PRESENT AND PROPOSED RATES AND CHARGES

Monthly Rate for All Customers		Westgate Present (1)	Penn Estate Present (1)	Tamiment (2)	Monthly Proposed
Meter Size					
5/8	inch meter	$17.25	$17.25	$54.55	$14.80
1	inch meter	43.13	43.13		25.70
1 1/2	inch meter	86.25	86.25		43.85
2	inch meter	138.00	138.00		65.60
6	inch meter			121.25	370.45
Availability Fee			56.43	19.14	30.40
Usage Charge (per 1,000 gallons)					
All Flow		$9.28	$9.28	$5.13	$12.76
Fire Protection					
Monthly Rate per Hydrant		$33.42			$237.90

(1) Current rates effective January 1, 2020 per Supplement No. 8 to Tariff Water-Pa. P.U.C. No. 1.
(2) Current rates effective July 17, 2010 per Supplement No. 3 to Tariff Water-Pa. P.U.C. No. 1.

(See Accountants' Special Purpose Report)

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Scott A. Miller, CPA

Scott A. Miller, partner and a leader in the public sector practice group has nearly twenty-six years of experience in the municipal advisor and utility rate industries.

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Bachelor of Science in Accounting
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CPA license to practice in Indiana

Registered municipal advisor with the Securities and Exchange Commission

He has extensive experience with financial studies for municipally owned water, electric, gas, steam and sewage utilities, not-for-profit and investor-owned water and sewer corporations, regional water and sewer districts and conservancy districts. These studies often involve determining utility revenue and rate requirements, cost-of-service studies, rate design and the financial planning associated with the acquisition of capital.

Specific experience

- Analyzes revenue requirements and performs cost of service studies and rate design for water, wastewater, electric, gas and steam utilities
- Serves as an expert witness before regulatory bodies in utility rate proceedings
- Provides assistance with bond and note financings through the capital market, State Revolving Fund, USDA Rural Development and other sources
- Provides financial reporting, strategic planning and rate management for utilities
- Provides asset management planning for utilities
- Prepares system development and capacity fee studies
- Assists with wholesale rate development and intergovernmental contract negotiations
- Provides valuation services related to utility rate base
- Advises on acquisitions, dispositions, mergers, privatization and re-municipalization of utilities
- Authors various articles related to the utility industry

Industry involvement

- American Institute of Certified Public Accountants (AICPA)
- Indiana CPA Society (INCPAS)
- American Water Works Association (AWWA)
- Chair, Water Utility Council / Indiana Section AWWA
- Accelerate Indiana Municipalities (AIM)
- Indiana Water Environment Association (IWEA)
- Indiana Rural Water Association (IRWA)
- Alliance of Indiana Rural Water (AIRW)
- Former member AIRW Advisory Council

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Thought leadership

- "Growing with the Auto Industry," AWWA, 2020 (co-author)
- "Public Works and Utilities," AIM 2020 (co-author)
- "Maximize Your Financial Advisor Relationship," Baker Tilly Utility University, 2019 (co-author)
- "Leveraging Your Municipal Utility for Community Benefit," AWWA, IWEA and AIM, 2019 (co-author)
- "Municipal Storm Water Funding -an Overview," State of Indiana Storm Water Management Task Force, 2019
- "Legislative Updates: What Utilities Need to Know," IRWA, 2019 (co-author)
- "Water Conservation and Lost Water and Their Impact on Utility Revenues," AWWA, IWEA and AIRW, 2019
- "Utilities and P3s – How to Attract Capital and Manage a Strong Program," AWWA, 2018 (co-author)
- "Succession Planning for Indiana Utilities," AWWA, IRWA and IWEA, 2017
- "Revenue Bond Financing," Indiana Public Finance Leadership Summit, 2017
- "Utilities and P3s – How to Attract Capital and Manage a Strong Program," AIM, 2017 (co-author)
- "ARRA Build America Bonds – Time to Refinance? and Use of TIF's," ACEC, 2016
- "Utility Rate Comparisons and Current Trends in Project Financing," AWWA, 2015
- "National Infrastructure Bank – A New Line of Credit?" AWWA, 2014
- "Encouraging Water Conservation through Effective Pricing," AWWA and AIRW, 2012
- "Connect Four: Economic Development Strategies for Lining Up Municipalities, Water, Energy & Money," AIM, 2011
- "Waterworks Rate Setting/Project Funding," AWWA, 2011 (co-author)
- "System Development Charges and Capital Planning," AIRW 2010 and IRSDA 2011
- "Ensuring Adequate Revenues to Maintain Utilities," AIM, 2010 (co-author)
- "The Benefits of Financial Planning," AWWA, 2009
- "Growing Pains: Utility Growth Issues," AIRW, 2008
- "Alternative Revenue Sources: Bridging A Funding Gap," AIM, 2008 (co-author)
- "Sales Tax and Other Taxability Issues – An Overview," AIRW, 2007 (co-author)
- "The Right Stuff: Municipal Utilities as a Launching Pad for Growth," AIM, 2007
- "How do you Rate? Utility Rate Studies," AIM, 2004 (co-author)
- "Rate Review Indicators and Fee Types," IASC, 2004

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Continuing professional education (external)

- Financial Management: Cost of Service Rate-Making (AWWA 1998)
- Intermediate Utility Cost of Service & Retail Rate Design (APPA 2010)
- Advanced Utility Cost of Service & Retail Rate Design (APPA 2010)
- Independence 2019 (Becker CPA 2019)
- Series 54 Pilot Exam (MSRB 2019)
- Pricing Municipal Bonds Through a Competitive Sale Process (MSRB 2019)
- Pricing Municipal Bonds Through a Negotiated Sale Process (MSRB 2019)
- Municipal Bond Math Basics (MSRB 2019)
- Advertising by Municipal Advisors: MSRB Rule G-40 (MSRB 2019)
- Preventing Workplace Harassment for Managers (emtrain 2019)
- Fostering a Diverse and Inclusive Workplace (emtrain 2109)
- Managing Unconscious Bias (emtrain 2019)
- Supervisory and Compliance Obligations of Municipal Advisors: MSRB Rule G-44 (MSRB 2018)
- Due Diligence: Primary Offering Disclosure Responsibilities (MSRB 2018)
- The Decision to Borrow: Roles and Responsibilities of Market Participants in Fixed Rate Primary Market Offerings (MSRB 2018)
- Revenue Recognition (Becker CPA 2018)
- U.S. Securities and Exchange Commission: Recent Trends and Actions (Becker CPA 2018)
- G400 Community Meeting (AICPA 2018)
- Introduction to Business Valuation (AICPA 2017)
- GAO Green Book – Government Internal Control Standards (Becker CPA 2017)
- Risk Management in the Public Sector (Becker CPA 2017)
- Emerging Leaders Academy Year 3 (Upstream Academy 2015)
- Emerging Leaders Academy Year 2 (Upstream Academy 2014)
- Emerging Leaders Academy Year 1 (Upstream Academy 2013)
- The Emerging Partner Training Forum (AICPA 2006)
- Leadership: Becoming an Impact Player (Center for Corporate Financial Leadership 2003)

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Expert Testimony

Venue	Petitioner	Petition Date	Cause No.	Subject
Indiana Utility Regulatory Commission	Gibson Water Authority	4/26/2021	45535	Rates and Financing
Indiana Utility Regulatory Commission	Citizens Wastewater of Westfield, LLC	03/31/2020	45362	Utility Fair Value
Indiana Utility Regulatory Commission	German Township Water District, Inc.	02/04/2020	45340-U	Rates
Pennsylvania Public Utility Commission	Community Utilities of Pennsylvania, Inc. (Water)	04/03/2019	3008947	Cost of Service and Single Tariff Pricing
Pennsylvania Public Utility Commission	Community Utilities of Pennsylvania, Inc. (Wastewater)	04/03/2019	3008948	Cost of Service and Single Tariff Pricing
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	2/1/2019	45198	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Gibson Water, Inc.	04/24/2018	45080	Rates and Financing
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	3/13/2018	45062	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	5/4/2016	44783	Financing
Indiana Utility Regulatory Commission	Citizens Thermal Energy	4/22/2016	44781	Cost of Service Rates
Indiana Utility Regulatory Commission	Citizens Gas of Westfield	12/30/2015	44731	Utility Fair Value
Indiana Utility Regulatory Commission	Community Utilities of Indiana, Inc.	12/15/2015	44724	Cost of Service Rates
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	7/6/2015	44642	Rates and Financing
Indiana Utility Regulatory Commission	Michigan City Department of Water Works	9/24/2014	44538	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Kingsbury Utility Corporation	3/27/2013	44327	Rates and Financing
Indiana Utility Regulatory Commission	Pioneer Water, LLC	2/22/2013	44309-U	Rates
Indiana Utility Regulatory Commission	City of Mishawaka Utilities	9/20/2012	44249	Cost of Service Rates
Indiana Utility Regulatory Commission	White River Citizens United (Testimony on behalf of Respondent Bargersville Municipal Water Utility	6/12/2012	44215	Complaint
Indiana Utility Regulatory Commission	Lebanon Municipal Electric Utility	1/9/2012	44142	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	10/17/2011	44095	Financing

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Expert Testimony

Venue	Petitioner	Petition Date	Cause No.	Subject
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	3/11/2010	43869	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	South Harrison Water Corporation	1/26/2010	43850	Cost of Service Rates
Indiana Utility Regulatory Commission	Mapleturn Utilities, Inc.	9/2/2009	43777-U	Rates and Financing
Indiana Utility Regulatory Commission	Peru Municipal Electric Utility	4/29/2009	43679	Coincident Peak Reduction Credit
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	3/18/2009	43658	Rates and Financing
Indiana Utility Regulatory Commission	Citizens Gas of Westfield	12/31/2008	43624	Utility Fair Value
Indiana Utility Regulatory Commission	Peru Municipal Electric Utility	7/7/2008	43529	Economic Development Rider
Indiana Utility Regulatory Commission	Kingsford Heights Municipal Water Utility	5/27/2008	43502-U	Rates
Indiana Utility Regulatory Commission	Knightstown Municipal Water Utility	2/19/2008	43440-U	Rates
Indiana Utility Regulatory Commission	Ramsey Water Company, Inc.	12/27/2007	43413	Rates
Indiana Utility Regulatory Commission	Bargersville Municipal Water Utility	12/21/2007	43410	Rates
Indiana Utility Regulatory Commission	Sanitary District of Hammond	6/25/2007	43307	Cost of Service Rates
Indiana Utility Regulatory Commission	Indiana Michigan Power Company (Testimony on behalf of Intervenor, Fort Wayne City Light and Power Works	6/19/2007	43306	Rates – Alternate Feed Service Rider
Indiana Utility Regulatory Commission	Ogden Dunes Municipal Water Utility	5/16/2007	43295-U	Rates
Indiana Utility Regulatory Commission	Peru Municipal Electric Utility	12/22/2006	43200	Rates
Indiana Utility Regulatory Commission	Elkhart Municipal Water Utility	12/11/2006	43191	Rates
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	3/15/2006	43003	Rates and Financing
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	2/28/2006	42993	Rates and Financing
Indiana Utility Regulatory Commission	Knightstown Municipal Electric Utility	10/12/2005	42933-U	Rates
Indiana Utility Regulatory Commission	Bargersville Municipal Electric Utility	8/2/2005	42892	Rates
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	5/11/2005	42856	Rates
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	3/2/2005	42798	Financing
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	1/20/2005	42776	Financing

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Expert Testimony

Venue	Petitioner	Petition Date	Cause No.	Subject
Indiana Utility Regulatory Commission	Sullivan-Vigo Water Corporation	3/19/2004	42599	Financing
Indiana Utility Regulatory Commission	Michigan City Department of Water Works	9/18/2003	42517	Rates
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	7/9/2003	42481	Rates
Indiana Utility Regulatory Commission	Van Buren Water, Inc.	1/22/2002	42159	Rates
Indiana Utility Regulatory Commission	Riverside Water Company, Inc.	11/6/2001	42122	Rates
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	8/17/2001	42066	Rates
Indiana Utility Regulatory Commission	Lafayette Municipal Water Utility	10/11/2000	41845	Rates and Financing
Indiana Utility Regulatory Commission	Michigan City Department of Water Works	3/17/2000	41689	Rates and Financing
Indiana Utility Regulatory Commission	Dunkirk Municipal Water Utility	5/5/1999	41431	Rates and Financing

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025206
Community Utilities of Pennsylvania Inc. – Water Division	:	
Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025207
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
SCOTT A. MILLER
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, Scott A. Miller, hereby certify that I am a Certified Public Accountant and a partner of Baker Tilly Municipal Advisors, LLC, and that, in such capacity, I have been retained by Community Utilities of Pennsylvania, Inc. ("CUPA") as an expert witness in the above-captioned matter for the purposes of providing testimony on CUPA's behalf.

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

For Community Utilities of Pennsylvania Inc. Water Division

- Direct Testimony, CUPA W Statement No. 6 consisting of 18 pages of written testimony with accompanying exhibits including:
    - CUPA W Exhibit No. SAM-1 and SAM-2

For Community Utilities of Pennsylvania Inc. Wastewater Division

- Direct Testimony, CUPA WW Statement No. 6 consisting of 14 pages of written testimony with accompanying exhibits including:
    - CUPA WW Exhibit No. SAM-1 and SAM-2

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021

Scott A. Miller
Certified Public Accountant & Partner
Baker Tilly Municipal Advisors, LLC

COMMONWEALTH OF PENNSYLVANIA

August 13, 2021

The Honorable Dennis J. Buckley
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania, Inc. - Water and Wastewater Divisions Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

Dear Judge Buckley:

Enclosed please find the Direct Testimony and Exhibits of Brian Kalcic, labeled OSBA Statement No. 1, on behalf of the Office of Small Business Advocate ("OSBA"), in the above-captioned proceedings.

As evidenced by the enclosed Certificate of Service, all known parties will be served, as indicated.

If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Erin K. Fure

Erin K. Fure
Assistant Small Business Advocate
Attorney ID No. 312245

Enclosures

cc: PA PUC Secretary Rosemary Chiavetta (Cover Letter & Certificate of Service only)
Brian Kalcic
Parties of Record

OSBA STATEMENT NO. 1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	**:**	
	:	
v.	**:**	**Docket No. R-2021-3025206**
	:	**Docket No. R-2020-3025207**
	:	
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	**:**	
WATER AND WASTEWATER DIVISIONS		

Direct Testimony and Exhibit of

BRIAN KALCIC

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

COVID-19 Backdrop
Revenue Allocation
Rate Design

Date Served: August 13, 2021

Date Submitted for the Record: _____

I. QUALIFICATIONS AND OVERVIEW

Q. Please state your name and business address.

A. Brian Kalcic, 225 S. Meramec Avenue, St. Louis, Missouri 63105.

Q. What is your occupation?

A. I am an economist and consultant in the field of public utility regulation, and principal of Excel Consulting. My qualifications are described in the Appendix to this testimony.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of the Office of Small Business Advocate ("OSBA"), which is representing the small business customers served by Community Utilities of Pennsylvania, Inc. – Water and Wastewater Divisions ("CUPA" or the "Company").

Q. What is the subject of your testimony?

A. My direct testimony addresses a number of topics. First, I will review the impact of the COVID-19 pandemic on current economic conditions, and discuss how those conditions may affect CUPA's rate request. Second, I will evaluate the propriety of the Company's proposed revenue allocation and rate design for water service, and sponsor changes to those proposals, where appropriate. Third, I will examine the propriety of CUPA's proposed revenue allocation and rate design for wastewater service, and again sponsor changes to those proposals, where appropriate. Fourth, I

will comment on certain issues raised in the Company's public input hearings, and indicate whether such issues pertain to CUPA's commercial customers.

Q. Do you have any preliminary comments?

Yes. I wish to note at the outset that my testimony and schedules reflect the Company's full water and wastewater rate requests in this proceeding. Any such reference is intended for comparison purposes only and should not be construed as a recommendation by the OSBA that the Commission grant CUPA's requests in whole or in part.

Q. How is your testimony organized?

A. My direct testimony is ordered as follows. Section I of my testimony contains my qualifications and an overview of my testimony. Section II reviews the current economic conditions that exist in face of the COVID-19 pandemic, and how those conditions should affect CUPA's rate request. In Section III, I will examine the Company's proposed revenue allocation and rate design for water service. Section IV will address the Company's proposed revenue allocation and rate design for wastewater service. Finally, in Section V, I will comment on certain issues raised at the Company's public input hearings, and determine whether such issues pertain to CUPA's commercial customers.

Q. Please summarize your recommendations.

A. Based on my analysis of the Company's filing and discovery responses, I recommend that the Commission:

- Reject CUPA's proposed revenue allocation for water service, which would entail the full consolidation of water rates across its service territory;
- Reject the Company's proposed rate design for water service;
- Adopt the OSBA's recommended revenue allocation and rate design proposals for water service customers;
- Reject CUPA's proposed revenue allocation for wastewater service, which would entail the full consolidation of wastewater rates across its service territory; and
- Adopt the OSBA's recommended revenue allocation proposal for wastewater service customers.

The specific details associated with my recommendations are discussed below.

II. COVID-19 BACKDROP

Q. Please describe the general economic environment in which this proceeding takes place.

A. CUPA filed its case on April 12, 2021. Since January 1, 2020, the COVID-19 pandemic has caused untold personal suffering and economic disruption, as evidenced by the following:

- over 36.3 million confirmed cases of COVID-19 in US; [1]
- over 619,000 confirmed deaths from COVID-19 in US;[2]
- US unemployment rate of 5.4% as of July, 2021;[3]
- Pennsylvania unemployment rate of 7.0% as of May, 2021;[4]
- East Stroudsburg unemployment rate of 7.0% as of May, 2021;[5]

Moreover, the COVID-19 pandemic remains ongoing in the US at this time, with the 7-day moving average number of new cases in the US at a level of 89,977 as of August 6, 2021, up 33.7% from a level of 67,274 in the prior week.[6]

Q. Should the Commission take the COVID-19 pandemic into account when issuing its decision in this case?

---

[1] https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6; reviewed August 12, 2021.
[2] *Id*.
[3] https://fred.stlouisfed.org/series/UNRATE
[4] https://www.bls.gov/regions/mid-atlantic/pennsylvania.htm#eag
[5] https://www.bls.gov/regions/mid-atlantic/pennsylvania.htm#eag
[6] https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

A. Very much so. In the OSBA's view, this is not the time for a utility to be requesting a large rate increase from ratepayers. In particular, since the COVID-19 pandemic is ongoing, the near-term outlook for small businesses remains uncertain at best. In short, this is not a period of "business as usual" for PA small businesses, and it should not be considered "business as usual" for Pennsylvania utilities.

Q. How can the Commission address this situation?

A. The OSBA recommends that the Commission limit any CUPA rate award to the maximum extent possible.

III. WATER SERVICE

Q. Mr. Kalcic, please describe the Company's current water rate structure.

A. At present, the Company serves approximately 3,412 water customers across two rate areas.[7] Each rate area contains a rate schedule applicable to general metered service ("GMS") customers. In addition, the Company maintains a separate public fire service rate schedule within its Consolidated rate area.

Within the Consolidated rate area, all GMS customers are subject to (i) the same set of (fixed) customer charges, which vary by meter size, and (ii) a flat rate consumption charge of $9.28 per thousand gallons. Within the Tamiment rate area, all GMS customers are subject to (i) a fixed customer charge, which varies by

[7] I will refer to the Company's rate areas as the Consolidated and Tamiment service areas.

customer class but not by meter size, and (ii) a flat rate consumption charge of $5.13 per thousand gallons.

The Company's system is overwhelmingly residential in nature, with residential customers comprising 93.5% of total water service accounts, and contributing 95.5% of present water service revenues.

Q. Is CUPA proposing any changes to its current rate structure?

A. Yes. First, CUPA proposes to consolidate its Tamiment and Consolidated rate areas at the conclusion of this proceeding. Second, the Company proposes to implement a reduced consumption charge for residential low-income customers in this case, with all foregone low-income revenues recovered from non-CAP residential customers.

Q. Mr. Kalcic, how does CUPA propose to recover its requested increase in water revenues in this case?

A. Schedule BK-1 provides a summary of the Company's proposed class revenue allocation. Page 1 shows CUPA's proposed revenue allocation on a total system basis, while the Company's proposed increases to its Consolidated and Tamiment rate areas are shown on pages 2 and 3, respectively.[8]

[8] Note that this order of presentation, i.e., Total System on page 1, followed by the Consolidated and Tamiment systems on pages 2-3, applies to all of the schedules shown in Exhibit BK-1.

As shown on page 1 of Schedule BK-1, the Company's overall proposed water revenue increase is 36.9% (line 5), with class increases ranging from a low of 32.4% (Residential) to a high of 322.1% (Public Fire).

Q. How do CUPA's proposed water service increases vary across the Consolidated and Tamiment service areas?

A. Page 2 of Schedule BK-1 shows that the Company's overall proposed Consolidated increase is 29.8% (line 5), with corresponding class increases ranging from a low of 21.5% (Commercial) to a high of 322.1% (Public Fire).

Page 3 of Schedule BK-1 shows that the Company's overall proposed Tamiment increase is 80.0% (line 5), with corresponding class increases ranging from a low of 70.4% (Residential) to a high of 189.0% (Commercial).

Q. How did CUPA determine its proposed water increases shown in Schedule BK-1?

A. For the residential and commercial customer classes, the Company's proposed revenue allocation is primarily driven by two factors: 1) the relative size of CUPA's proposed increases to GMS customer versus consumption charges; and 2) CUPA's proposal to consolidate its Tamiment and Consolidated rate areas.

For the public fire protection class, the Company's proposed increase is a consequence of setting the class revenue target at 50% of the total public fire service revenue requirement shown in CUPA W Exhibit SAM-1.

Q. Please discuss CUPA's proposed GMS rate design.

A. As shown in Table 1 below, the Company is proposing to collect $1.086 million of its claimed $2.813 million water service revenue requirement via GMS customer charges and availability charges.

Table 1

Summary of CUPA's Proposed GMS Fixed Charge Revenue Requirement

Cost Category	*Revenue Requirement*	*% of Total*
	(1)	(2)
Meters & Services	$314,856	29.0%
Billing	333,714	30.8%
Unrecovered Public Fire	88,336	8.1%
Fixed Charge Recovery Adj.	348,678	32.1%
Total Fixed Recovery	$1,085,584	100.0%

Source: CUPA W Exhibit AWD-1

Q. To what does the Fixed Charge Recovery Adjustment ("FCRA") line in Table 1 refer?

A. The adjustment relates to CUPA's desire to maintain the same degree (%) of fixed charge revenue recovery at proposed rates as at present rates, so as to maintain revenue stability.[9]

Q. Is CUPA's FCRA cost based?

[9] See CUPA W Statement No. 4 at page 4.

A. No. Traditional ratemaking practice would limit customer charges to the recovery of customer-related costs and therefore exclude the Company's FCRA when designing GMS fixed charges.

Q. What is CUPA's overall proposed increase to GMS fixed charges and availability charges, and how does that increase compare to the Company's overall proposed GMS consumption charge increase?

A. The Company proposes to increase GMS fixed charge and availability charge revenues from $743,116 to $1,085,584, or 46.1%.[10] In contrast, CUPA proposes to increase GMS consumption charge revenues from $1,294,107 to $1,639,232, or only 26.7%.[11]

Q. Mr. Kalcic, do you find CUPA's overall proposed fixed charge and consumption charge increases reasonable?

A. No. As previously discussed, the Company's proposal to increase fixed charge revenues by a greater percentage than consumption charge revenues is not cost based. In addition, the Company's proposed differential increases in such charges may exacerbate individual GMS customer bill impacts, independent of the effects of rate consolidation.

Q. What do you recommend?

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[10] Applicable fixed charge revenue at present rates of $743,116 shown in CUPA's response to I&E-RS-2-D.

[11] See CUPA's response to I&E-RS-2-D and CUPA W Exhibit AWD-1.

A. I recommend that the Commission direct CUPA to assign a uniform percentage increase to (i) overall GMS fixed charge and availability charge revenues and (ii) overall GMS consumption charge revenues. The uniform percentage increase should be determined as the residual increase necessary to achieve the Company's final rate award, if any, after determining the final increase to the public fire protection class.

Q. Do you have any comment on CUPA's proposed public fire increase in this proceeding?

A. Yes. As shown in Schedule BK-1, CUPA proposes to increase public hydrant rates by 322.1%. However, Section 1328 of the Public Utility Code limits public fire rates to 25% of fully allocated cost of service. In response to OSBA-I-2, CUPA states that it will limit public hydrant rates to 25% of fully allocated cost of service in its rebuttal testimony.

Q. Do you have any final comment on CUPA's proposed water rate design?

A. Yes. As I previously mentioned, CUPA is proposing to implement a low-income rate in the form of a reduced consumption charge for residential low-income customers. All foregone revenues associated with the Company's low-income rate proposal would be recovered from non-CAP residential customers via a higher residential consumption charge. Counsel advises that the OSBA takes no position on CUPA's low-income rate proposal, as long as all administrative costs and

foregone revenues associated with the proposal are recovered from residential customers.

Q. Please turn to the second factor driving the class increases shown in Schedule BK-1, namely, rate consolidation. Has the Company explained why it is proposing to consolidate its water service rates in this proceeding?

A. Not directly. It is my understanding that the Commission approved the Company's prior rate consolidation proposal in CUPA's last base rate case, and CUPA apparently believes that rate consolidation remains an appropriate rate design goal in this case.

Q. Do you agree with the Company that rate consolidation is an appropriate rate design goal?

A. I do, since rate consolidation is necessary to implement the Commission's long-standing policy of single tariff pricing.

Q. Are you therefore in agreement with the Company's proposal to consolidate its Tamiment and Consolidated rate areas at the conclusion of this proceeding?

A. No, I am not. In the OSBA's view, the outstanding question in this proceeding is whether CUPA's Tamiment rate area should be moved *to* or *toward* full rate consolidation at this time.

I note that this is the first rate case since CUPA acquired the Tamiment systems in August of 2019.[12] In my experience, rate consolidation is a process that is often carried out over two or more rate proceedings, depending on the magnitude of the difference in rates across rate areas. In this instance, page 3 of Schedule BK-1 shows that full rate consolidation over this one rate case would necessitate imposing an overall increase of 80.0% on Tamiment customers, which may be compared to CUPA's overall system average increase of 36.9%.

The magnitude of the increase required to consolidate the Tamiment rate area, coupled with the ongoing impacts of the COVID-19 pandemic, leads me to conclude that it would not be appropriate to fully consolidate CUPA's Tamiment system rates at the conclusion of this proceeding.

Q. What do you recommend?

A. In order to mitigate rate impacts on Tamiment system customers in this proceeding, I recommend that the Commission direct CUPA to (i) consolidate (only) the GMS customer charges and availability charges paid by customers in the Tamiment and Consolidated rate areas, and (ii) eliminate one-half of the existing difference in GMS consumption charges of $4.15 per thousand gallons across the two rate areas. Further consolidation of Tamiment system rates should be addressed in CUPA's next rate case.

[12] See CUPA's response to OSBA-II-1.

IV. WASTEWATER SERVICE

Q. Please describe the Company's current wastewater rate structure.

A. At present, the Company serves approximately 3,971 wastewater customers across two rate areas.[13] Each rate area contains a rate schedule applicable to residential, commercial and/or schools, collectively, general service ("GS") customers. Each rate area also includes an availability charge.

Within the Consolidated rate area, all GS customers are subject to a fixed monthly service charge. Within the Tamiment rate area, all GS customers are subject to (i) a fixed customer charge, which varies by customer class but not by meter size, and (ii) a flat rate usage charge of $13.73 per thousand gallons.

The Company's wastewater system is overwhelmingly residential in nature, with residential customers comprising 95.3% of total wastewater service accounts, and contributing 97.5% of present wastewater service revenues.

Q. Is CUPA proposing any changes to its current rate structure?

A. Yes. CUPA is proposing to consolidate its Tamiment and Consolidated rate areas at the conclusion of this proceeding.

Q. Mr. Kalcic, how does CUPA propose to recover its requested increase in wastewater revenues in this case?

[13] I will refer to the Company's wastewater rate areas as the Consolidated and Tamiment service areas.

A. Schedule BK-2 provides a summary of the Company's proposed class revenue allocation. Page 1 shows CUPA's proposed revenue allocation on a total system basis, while the Company's proposed increases to its Consolidated and Tamiment rate areas are shown on pages 2 and 3, respectively.

As shown on page 1 of Schedule BK-2, the Company's overall proposed wastewater revenue increase is 37.5% (line 5), with class increases ranging from a low of -32.5% (Commercial) to a high of 174.5% (Availability).

Q. How do CUPA's proposed wastewater service increases vary across the Consolidated and Tamiment service areas?

A. Page 2 of Schedule BK-2 shows that the Company's overall proposed Consolidated increase is 41.6% (line 5), with corresponding class increases ranging from a low of 35.2% (Schools) to a high of 74.7% (Availability).

Page 3 of Schedule BK-2 shows that the Company's overall proposed Tamiment increase is 19.8% (line 5), with corresponding class increases ranging from a low of -68.4% (Commercial) to a high of 200.2% (Availability).

Q. How did CUPA determine its proposed wastewater increases shown in Schedule BK-2?

A. The Company's proposed rate design reflects the recovery of its claimed wastewater revenue requirement from customer classes based on (i) each class's cost equivalency factor and (ii) the number of bills.[14] The difference in proposed

[14] See CUPA WW Statement No.4 at page 3.

class increases across the Consolidated and Tamiment rate areas is due to CUPA's rate consolidation proposal.

Q. Mr. Kalcic, do you find CUPA's general wastewater rate design approach reasonable?

A. Yes, particularly since the fixed monthly service charge that results is already applicable to the majority of CUPA's wastewater customers, i.e., to customers in CUPA's Consolidated rate area.

Q. Do you agree with the Company's proposal to consolidate its Tamiment and Consolidated rate areas in this case?

A. No. In this instance, rate consolidation would favor Tamiment system customers since Tamiment wastewater rates are generally higher than CUPA's Consolidated system rates. However, in order to mitigate the rate impacts on Consolidated system customers shown on page 2 of Schedule BK-2, and to be consistent with my recommendation with respect to *not* fully consolidating water rates, I would recommend that CUPA target its Tamiment system customers with an overall increase of approximately 28.0%, or 0.75 times the system average. Further consolidation of Tamiment system wastewater rates should be addressed in CUPA's next rate case.

V. MISCELLANEOUS ISSUES

Q. What topic do you wish to address in this section of your testimony?

A. I am advised by Counsel that certain customer service issues were aired by residential ratepayers during the Company's public input hearings. While I understand that no commercial customers testified at the public input hearings, the OSBA nevertheless sought to ascertain through discovery whether CUPA may have received similar types of complaints from small business customers over the past twelve months.

Q. Did the Company receive any complaints from commercial customers regarding water quality issues over the last twelve months?

A. For the record, the OSBA wishes to note that CUPA received no such complaints from commercial customers.[15]

Q. Does this conclude your direct testimony?

A. Yes.

[15] See CUPA's response to OSBA-I-1.

EXHIBIT BK-1

Schedules BK-1 and Schedule BK-2

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate Water Revenue
Basis: Total System under Consolidated Rates
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,963,901	$635,337	32.4%
2	Commercial	$35,353	$21,638	61.2%
3	Availability	$35,394	$33,280	94.0%
4	Public Fire	$20,929	$67,406	322.1%
5	Total Company	$2,055,577	$757,661	36.9%

$757,517	Target
$144	Rounding

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate Water Revenue
Basis: Currently Consolidated Service Territories
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,709,788	$456,343	26.7%
2	Commercial	$26,978	$5,808	21.5%
3	Availability	$10,282	($1,908)	-18.6%
4	Public Fire	$20,929	$67,406	322.1%
5	Total	$1,767,976	$527,650	29.8%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate Water Revenue
Basis: Tamiment Service Territory
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue 1/	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$254,114	$178,994	70.4%
2	Commercial	$8,375	$15,830	189.0%
3	Availability	$25,112	$35,188	140.1%
4	Public Fire	$0	$0	-
5	Total	$287,600	$230,012	80.0%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Wastewater Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate WW Revenue
Basis: Total System under Consolidated Rates
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$2,596,876	$931,393	35.9%
2	Commercial	$13,243	($4,300)	-32.5%
3	Schools	$16,451	$5,787	35.2%
4	Availability	$37,759	$65,908	174.5%
5	Total Company	$2,664,330	$998,789	37.5%
			$998,705	Target
			$84	Rounding

Source: CUPA Response to I&E-RS-2-D & CUPA WW Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Wastewater Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate WW Revenue
Basis: Currently Consolidated Service Territories 1/
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$2,132,470	$885,884	41.5%
2	Commercial	$4,339	$1,788	41.2%
3	Schools	$16,451	$5,787	35.2%
4	Availability	$7,715	$5,759	74.7%
5	Total	$2,160,974	$899,219	41.6%

Source: CUPA Response to I&E-RS-2-D & CUPA WW Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Wastewater Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate WW Revenue
Basis: Tamiment Service Territory
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue 1/	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$464,407	$45,510	9.8%
2	Commercial	$8,904	($6,088)	-68.4%
3	Schools	$0	$0	-
4	Availability	$30,045	$60,149	200.2%
5	Total	$503,356	$99,570	19.8%

Source: CUPA Response to I&E-RS-2-D & CUPA WW Exhibit AWD-1.

REFERENCED INTERROGATORY RESPONSES

I&E-RS-2-D

OSBA-I-1
OSBA-I-2

OSBA-II-1

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions' Responses to Bureau of Investigation and Enforcement Data Requests Set RS Nos. 1-9

I&E-RS-2-D Provide the amount of Forfeited Discount revenue received in 2018 and 2019.

RESPONSE: Please refer to the attached file, "Response to I&E-RS-3-D Historical Forfeited Discounts".

PROVIDED BY: Perry Brown, Financial Planning & Analysis Manager

DATE: May 18, 2021

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc.
Water and Wastewater Divisions; Docket No. R-2021-3025206, R-2021-3025207

Community Utilities of Pennsylvania Inc.
Responses to Office of Small Business Advocate Interrogatories, Set I Nos. 1-5

1. Please provide a copy of the log of all complaints received from commercial customers regarding water quality issues in the last twelve months. Include the date of the complaint, the date of CUPA's response, any action taken by CUPA, and whether the issue was resolved to the customer's satisfaction.

RESPONSE: There were no water quality complaints from commercial customers in the last 12 months.

PROVIDED BY: **David Clark**

DATE: **July 22, 2021**

2. Reference CUPA W Statement No. 4, at page 3.

   a. Please confirm that CUPA's fire protection class is comprised solely of public (rather than private) fire protection customers.
   b. Please explain why CUPA is not proposing to limit public fire protection rates to 25% of fully allocated cost of service, consistent with Section 1328 of the Public Utility Code.

RESPONSE:

   a. Confirmed.
   b. CUPA should have limited public fire protection rates to 25% of fully allocated cost of service and will adopt this position in its rebuttal testimony.

PROVIDED BY: **Andrew Dickson**

DATE: **July 22, 2021**

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc.
Water and Wastewater Divisions; Docket No. R-2021-3025206, R-2021-3025207

Community Utilities of Pennsylvania Inc.
Responses to Office of Small Business Advocate Interrogatories, Set II No. 1

1. Reference Section 2, Supporting Schedule No. 1, page 3 of 3, Water Service, contained in CUPA's response to I&E-RS-1.
    a. Line 17 of the referenced schedule shows a Tamiment commercial water service category containing two 6" meters, with zero usage associated with the meters. How many customers are billed for the 6" meters?
    b. Please identify the most recent month(s) that reflect usage for the referenced 6" meters.
    c. Why is the Company projecting zero annual usage for the referenced 6" meters?
    d. Please describe in detail the type of commercial business operations associated with the 6" meters.

RESPONSE: **a. All billings related to the 6" meter as reflected in line 17 are associated with the customer "Mount Laurel Center for Performing Art".**
b. There has been no water usage for this customer since the Tamiment systems were acquired in August of 2019.
c. This is a convention center that has been shut down and is for sale, so no water is being used.
d. Please refer to the responses to "a" and "c" above.

PROVIDED BY: **David Clark**

DATE: **August 2, 2021**

APPENDIX

APPENDIX

Qualifications of Brian Kalcic

Mr. Kalcic graduated from Benedictine University with a Bachelor of Arts degree in Economics in December 1974. In May 1977 he received a Master of Arts degree in Economics from Washington University, St. Louis. In addition, he has completed all course requirements at Washington University for a Ph.D. in Economics.

From 1977 to 1982, Mr. Kalcic taught courses in economics at both Washington University and Webster University, including Microeconomic and Macroeconomic Theory, Labor Economics and Public Finance.

During 1980 and 1981, Mr. Kalcic was a consultant to the Equal Employment Opportunity Commission, St. Louis District Office. His responsibilities included data collection and organization, statistical analysis and trial testimony.

From 1982 to 1996, Mr. Kalcic was employed by the firm of Cook, Eisdorfer & Associates, Inc. During that time, he participated in the analysis of electric, gas and water utility rate case filings. His primary responsibilities included cost-of-service and economic analysis, model building, and statistical analysis.

In March 1996, Mr. Kalcic founded Excel Consulting, a consulting practice that offers business and regulatory analysis.

Mr. Kalcic has previously testified before the state regulatory commissions of Delaware, Indiana, Kansas, Kentucky, Maine, Massachusetts, Minnesota, Missouri, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas, and also before the Bonneville Power Administration.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**Docket No. R-2021-3025206**
	:	**Docket No. R-2021-3025207**
	:	
Community Utilities of Pennsylvania, Inc. Water Divisions	:	
Community Utilities of Pennsylvania, Inc. Wastewater Divisions	:	

VERIFICATION

I, Brian Kalcic, hereby state that the facts set forth in my Direct Testimony labeled OSBA Statement No. 1 are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities).

Date: August 12, 2021

(Signature)

Brian Kalcic

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**R-2021-3025206**
	:	**R-2021-3025207**
Community Utilities of PA, Inc.	:	
Water/Wastewater	:	

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email (*unless other noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

The Honorable Dennis J. Buckley
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120
debuckley@pa.gov

Allison C. Kaster, Esquire
Bureau of Investigation & Enforcement
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(Counsel for Community Utilities of PA)

/s/ Erin K. Fure

Erin K. Fure
Assistant Small Business Advocate
Attorney ID No. 312245

DATE: August 13, 2021

I&E Exhibit No. 1
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WATER DIVISION

Docket No. R-2021-3025206

Exhibit to Accompany

the

Direct Testimony

of

Zachari Walker

Bureau of Investigation & Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

CASH WORKING CAPITAL

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Divisions; Docket No. R-2021-3025206

Community Utilities of Pennsylvania Inc. Water Divisions' Responses to
Bureau of Investigation and Enforcement Data Requests Set RE-1-D to RE-28-D

I&E-RE-8-D Reference CUPA Water filing Section 1, page 1-12, concerning employee pensions and benefits:

A. Provide a yearly breakdown by benefit type with supporting documentation for the HTY, FTY and FPFTY employee pensions and benefits expense amounts as follows: HTY - $27,617; FTY - $104,821; and FPFTY - $111,990;

B. Provide a yearly breakdown of employee pensions and benefits expense for 2018 and 2019 by benefit type;

C. For each year 2018, 2019, the HTY, the FTY, and the FPFTY, provide a breakdown of employee pension/benefits by benefit type broken down between expense amount and the capitalized amount by year;

D. Provide detailed explanations with supporting documentation for any increases or decreases in employee pensions and benefits from 2018 to 2019 and 2019 to the HTY; and

E. For each of the itemized pension/benefits expense amounts in response to Part A above, provide the number of employees eligible and the actual number of employees enrolled in each benefit for 2018, 2019, the HTY, the FTY, and the FPFTY.

RESPONSE:

Please refer to the attachments included in a response to I&E-RE-4D. Employee benefits fluctuate as salary expenses and headcount changes. Please refer to the response to I&E-RE-6-D and I&E-RE-6-D.

PROVIDED BY: **Perry Brown, Financial Planning & Analysis Manager**

DATE: May 20, 2021

Employee Pensions & Benefits

Historical Data:	2018 [1]	2019 [2]	HTY 2020 [3]
Salaries & Wages - Employees (S&W)	$ 273,503	$ 362,157	$ 381,480
Employee Pensions & Benefits (EP&B)	$ 74,116	$ 80,798	$ 76,463
EP&B Percent of S&W	27%	22%	20%

Company Claim:	FPFTY 2022
Salaries & Wages - Employees (S&W)	$ 396,201
Employee Pensions & Benefits (EP&B)	$ 111,990
EP&B Percent of S&W	28%

I&E Recommendation:	FPFTY 2022
Salaries & Wages - Employees (S&W)	$ 396,201
Employee Pensions & Benefits (EP&B)	$ 79,414
EP&B Percent of S&W	20%

I&E Recommended Adjustment:	**$ (32,576)**

[1] Per Response to I&E-RE-3-D.
[2] Per Response to I&E-RE-3-D.
[3] Per CUPA W Statement No. 3, Exhibit DMC-1, Section 1, p. 12.

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Divisions; Docket No. R-2021-3025206

Community Utilities of Pennsylvania Inc. Water Divisions' Responses to
Bureau of Investigation and Enforcement Data Requests Set RE-1-D to RE-28-D

I&E-RE-3-D Reference CUPA Water filing Section 1, page 1-12 operating expenses, provide a similar comparative schedule of the Company's operating and maintenance expenses that includes columns for 2018 and 2019.

RESPONSE: **Please reference the attached file "I&E-RE-1 3 O&M Expenses -Water"**

PROVIDED BY: **David Clark**

DATE: **May 20, 2021**

Community Utilities of Pennsylvania
Response to I&E-RE-3
O&M Expenses

Water Operations

NARUC Acct. No.	Account Description	Per Books Base Year Ended 12/31/18	Per Books Base Year Ended 12/31/19
701	Water - Salaries & Wages - Employees	$ 273,503	$ 362,157
704	Water - Employee Pensions & Benefits	74,116	80,798
711	Water - Sludge Hauling & Sewer Rodding	-	-
615	Water - Purchased Power	38,854	35,475
610	Water - Purchased Water	220,606	227,439
718	Water - Chemicals	42,507	60,603
720	Water - Materials, Supplies, and Other Maintenance Expense	21,175	45,278
731	Water - Engineering Fees	1,497	4,718
732	Water - Contractual Services - Accounting	6,208	5,202
733	Water - Contractual Services - Legal	9,302	7,596
736	Water - Contractual Services - Other	5,327	11,846
741	Water - Rental of Building/Real Property	2,505	7,729
750	Water - Transportation Expenses	17,667	24,566
759	Water - Insurance - Other	29,636	36,487
760	Water - Advertising Expense	313	4
675	Water - Office Utilities, Supplies & Other Office Expenses	48,507	75,149
766	Water - Regulatory Commission Expenses - Normalization of Rate Case Expense	17,439	17,520
767	Water - Regulatory Commission Expenses - Other	2,079	189
775	Water - Testing and Miscellaneous Expense	40,104	56,292
	Total Operating and Maintenance Expenses	$ 851,344	$ 1,059,047

Purchased Power Expense

Historical Data	2018 [1]	2019 [1]
Purchased Power Expense	$ 38,854	$ 35,475
Water Division ERC	2,713 [2]	3,226 [2]
Expense Per ERC	$ 14.32	$ 11.00

	HTY 2020 [3]	3-Year Average
Purchased Power Expense	$ 120,160	$ 64,830
Water Division ERC	**3,291** [4]	
Expense Per ERC	$ 36.51	$ 20.61

Company Claim	FPFTY 2022 [3]
Purchased Power Expense	$ 106,110.00
Water Division ERC	**3,291** [4]
Expense Per ERC	$ 32.24

I&E Recommendation	FPFTY 2022
Water Division ERC	**3,291** [4]
Expense Per ERC	$ 20.61
Recommended Allowance	**$ 67,827**
Recommended Adjustment:	**$ (38,283)**

1 Per response to I&E-RE-3-D.
2 ERC sourced from Annual Report unless otherwise specified.
3 Per CUPA W Statement No. 3, Exhibit DMC-1, Section 1, p. 12.
4 Per CUPA W Statement No. 3, Exhibit DMC-2, WP-DC-01.

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Divisions; Docket No. R-2021-3025206

Community Utilities of Pennsylvania Inc. Water Divisions' Responses to
Bureau of Investigation and Enforcement Data Requests Set RE-1-D to RE-28-D

I&E-RE-10-D Reference CUPA Water filing Section 1, page 1-12, concerning purchased power expense:

A. Provide the purchased power invoices for each metered site for the HTY and FTY through most recent invoice available;

B. Provide a yearly breakdown with supporting documentation of power expense by metered site for 2018, 2019, and the HTY;

C. Provide detailed explanations with supporting documentation for any increases or decreases in purchased power from 2018 to 2019 and 2019 to the HTY;

D. Explain the method used to determine the FTY decrease of ($16,295); and the FPFTY increase of $2,245; and provide supporting workpapers; and

E. Provide supporting workpapers for the HTY amount of $120,160; FTY amount of $103,865; and the FPFTY amount of $106,110.

RESPONSE:

A. **Please refer to the attached file "I&E-RE-1 10-A Purchased Power invoice backup".**

B. Please refer to the attached file "I&E-RE-1 10-B (Purchased Power)" and tab "Summary W".

C. Please see the response above for "B".

D. Electric power costs are forecasted, by month, based on the historical levels of electric power costs. FTY 2021 and FPFTY 2022 forecasts are based on vendor invoicing for the service periods September 2012 through May 2020. The last twelve months (June 1, 2018 through May 30, 2019) of service costs were used as a base and an average annual growth rate from the historical periods was applied to all forecast periods. Details of these calculations are provided in the workbook "I&E-RE-1 10-D Purchased Power 2021 & 2022".

E. **Please see the attached files "I&E-RE-1 10-E HTY Purchased Power", and "I&E-RE-1 10-D Purchased Power 2021 & 2022".**

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Divisions; Docket No. R-2021-3025206

Community Utilities of Pennsylvania Inc. Water Divisions' Responses to
Bureau of Investigation and Enforcement Data Requests Set RE-1-D to RE-28-D

PROVIDED BY: **David Clark**

DATE: **May 20, 2021**

Community Utilities of Pennsylvania, Inc.
Response to I&E-RE-10-B

		Account Number:	2728124009	948124007	8653759005	9773811018	9470124003	930123005	770123003	2602102001	5307145003	100136783444	100136783519	3053405005		
		Service Address:	Penn Est Well Pump 2	Penn Est Dr Well 5	Summerton Cir, Shed	Clicko Ln, Shed	Woodbine Ct. Stand Pipe	Greenbriar Dr. Sec B	Penn Est Well Pump 3	Hallet & Willowicke Rd. Pump Station	Hyland Dr., Well Pump 8	Tamiment Water Tower Dr	Tamiment Pump House Phase 2	Penn Est Dr., Well House		
Year	**Month**	**Period**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Amount**	**Yearly Amount**	
2018	1	**Jan-18**	$ 545	$ 1,043	$ 57	$ 159	$ 31	$ 539	$ 500	$ 959	$ 281	$ -	$ -	$ 281		
2018	2	**Feb-18**	$ 539	$ 870	$ 55	$ 174	$ 43	$ 320	$ 464	$ 845	$ 283	$ -	$ -	$ 240		
2018	3	**Mar-18**	$ 469	$ 597	$ 52	$ 126	$ 51	$ 337	$ 415	$ 772	$ 291	$ -	$ -	$ 244		
2018	4	**Apr-18**	$ 471	$ 720	$ 53	$ 106	$ 48	$ 401	$ 395	$ 668	$ 283	$ -	$ -	$ 228		
2018	5	**May-18**	$ 421	$ 663	$ 42	$ 52	$ 40	$ 326	$ 324	$ 724	$ 162	$ -	$ -	$ 193		
2018	6	**Jun-18**	$ 471	$ 565	$ 33	$ 35	$ 32	$ 452	$ 296	$ 962	$ 234	$ -	$ -	$ 197		
2018	7	**Jul-18**	$ 558	$ 624	$ 31	$ 33	$ 31	$ 456	$ 449	$ 871	$ 230	$ -	$ -	$ 203		
2018	8	**Aug-18**	$ 516	$ 440	$ 31	$ 34	$ 31	$ 467	$ 419	$ 740	$ 210	$ -	$ -	$ 146		
2018	9	**Sep-18**	$ 515	$ 399	$ 31	$ 34	$ 31	$ 473	$ 420	$ 796	$ 231	$ -	$ -	$ 73		
2018	10	**Oct-18**	$ 411	$ 589	$ 31	$ 32	$ 32	$ 268	$ 295	$ 752	$ 183	$ -	$ -	$ -		
2018	11	**Nov-18**	$ 437	$ 443	$ 37	$ 77	$ 36	$ 402	$ 374	$ 796	$ 228	$ -	$ -	$ 89		
2018	12	**Dec-18**	$ 403	$ 515	$ 48	$ 114	$ 44	$ 375	$ 433	$ 899	$ 91	$ -	$ -	$ 78	**$ 39,216**	2018
2019	1	**Jan-19**	$ 540	$ 733	$ 72	$ 101	$ 46	$ 543	$ 477	$ 893	$ 214	$ -	$ -	$ 129		
2019	2	**Feb-19**	$ 617	$ 737	$ 82	$ 127	$ 47	$ 564	$ 472	$ 843	$ 109	$ -	$ -	$ 258		
2019	3	**Mar-19**	$ 397	$ 930	$ 73	$ 135	$ 45	$ 556	$ 481	$ 722	$ 124	$ -	$ -	$ 230		
2019	4	**Apr-19**	$ 207	$ 732	$ 58	$ 109	$ 39	$ 474	$ 482	$ 711	$ 89	$ -	$ -	$ 101		
2019	5	**May-19**	$ 192	$ 701	$ 42	$ 65	$ 36	$ 345	$ 179	$ 753	$ -	$ -	$ -	$ 98		
2019	6	**Jun-19**	$ 107	$ 831	$ 37	$ 29	$ 32	$ 242	$ 297	$ 712	$ -	$ -	$ -	$ 77		
2019	7	**Jul-19**	$ 226	$ 747	$ 36	$ 31	$ 33	$ 279	$ 415	$ 796	$ 169	$ -	$ -	$ 46		
2019	8	**Aug-19**	$ 574	$ 553	$ 32	$ 32	$ 32	$ 375	$ 349	$ 734	$ -	$ -	$ -	$ 50		
2019	9	**Sep-19**	$ 622	$ 579	$ 32	$ 32	$ 33	$ 384	$ 396	$ 679	$ -	$ 26	$ 40	$ 124		
2019	10	**Oct-19**	$ 616	$ 567	$ 38	$ 40	$ 33	$ 331	$ 409	$ 710	$ -	$ 21	$ 46	$ 148		
2019	11	**Nov-19**	$ 496	$ 543	$ 45	$ 45	$ 37	$ 263	$ 355	$ 590	$ -	$ 21	$ 50	$ 185		
2019	12	**Dec-19**	$ 335	$ 633	$ -	$ 62	$ 44	$ 234	$ 419	$ 615	$ -	$ 21	$ 43	$ 193	**$ 35,722**	2019
2020	1	**Jan-20**	$ 591	$ 577	$ -	$ 60	$ 53	$ 198	$ 416	$ 729	$ -	$ 21	$ 50	$ 245		
2020	2	**Feb-20**	$ 359	$ 556	$ 56	$ 66	$ 50	$ 308	$ 375	$ 592	$ -	$ 23	$ 50	$ 217		
2020	3	**Mar-20**	$ 109	$ 610	$ 67	$ 59	$ 49	$ 451	$ 426	$ 697	$ -	$ -	$ 49	$ 236		
2020	4	**Apr-20**	$ 442	$ 579	$ 49	$ 49	$ 43	$ 469	$ 443	$ 734	$ -	$ 24	$ 51	$ 237		
2020	5	**May-20**	$ 552	$ 600	$ 47	$ 46	$ 41	$ 396	$ 418	$ 648	$ -	$ 24	$ 58	$ 221		
2020	6	**Jun-20**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
2020	7	**Jul-20**	$ -	$ -	$ 37	$ 38	$ -	$ 418	$ 404	$ 703	$ -	$ 24	$ 45	$ 189		
2020	8	**Aug-20**	$ 543	$ 755	$ 32	$ 37	$ 68	$ 479	$ 431	$ 722	$ -	$ -	$ 94	$ 186		
2020	9	**Sep-20**	$ 576	$ 855	$ 31	$ 33	$ (1)	$ 459	$ 388	$ 897	$ -	$ 24	$ -	$ 174		
2020	10	**Oct-20**	$ 1,181	$ 2,326	$ 69	$ 130	$ 93	$ 532	$ 245	$ 795	$ -	$ 48	$ 46	$ 318		
2020	11	**Nov-20**	$ -	$ -	$ -	$ -	$ -	$ 478	$ 346	$ 867	$ -	$ 146	$ 92	$ 321		
2020	12	**Dec-20**	$ 997	$ 2,388	$ 101	$ (19)	$ 62	$ 818	$ 813	$ 1,911	$ -	$ -	$ -	$ 195	**$ 38,450**	2020
		3 Year Total Amount	$ 16,037	$ 25,000	$ 1,532	$ 2,284	$ 1,366	$ 14,414	$ 14,222	$ 27,838	$ 3,412	$ 422	$ 712	$ 6,149		
		Yearly Average	$ 5,346	$ 8,333	$ 511	$ 761	$ 455	$ 4,805	$ 4,741	$ 9,279	$ 1,137	$ 141	$ 237	$ 2,050		

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Divisions; Docket No. R-2021-3025206

Community Utilities of Pennsylvania Inc. Water Divisions' Responses to Bureau of Investigation and Enforcement Data Requests Set RE Nos. 33-36

I&E-RE-36 Reference CUPA Water filing Section 1, page 1-12 and CUPA W Statement No. 3, page 8, concerning purchased power expense. Provide a description of the cost driver(s) for this expense account.

RESPONSE: **The cost drivers for purchased power are the price per KWh and the usage. There are additional variables due to seasonality and customer usage, as more purchased power is required to pump water to customer premises when demand increases. Similarly, when usage increases, more purchased power is required at the treatment plants as well.**

PROVIDED BY: **David Clark**

DATE: **July 8, 2021**

Community Utilities of Pennsylvania, Inc. Supplement No. 5 to Tariff Water — Pa. PUC No. 1
at Docket No. R-2019-3008947

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.'S RESPONSES TO BUREAU OF TECHNICAL UTILITY SERVICES DATA REQUESTS, SET I

R-10. Please provide a definition for the term "Equivalent Residential Customers" and identify the section of CUPA's tariff where this term is defined.

RESPONSE:

ERC is a ratio assigned to a customer or class of customers based on a meter sizes and an average number of gallons per day. The actual number of connections is then multiplied by the ERC to determine a total number of ERCs per subdivision or company. The following table depicts the ratios used:

Meter Size	ERCs
Residential	
Single family detached dwellings	1.0
Multiple family dwellings	0.8
Mobile homes	0.8
Nonresidential	
5/8"	1.0
	1.5
1"	2.5
1 W'	5.0
2"	8.0
3"	15.0
4"	25.0
6"	50.0
8"	80.0
10"	1 I 5.0
12"	215.0

For example, a nonresidential water and wastewater customer with a 2" meter would be considered 8ERCs for water and 8 ERCs for wastewater for a total of 16 ERCs.

Equivalent Residential Customer is not defined on the CUPA's submitted tariff.

Provided by: Perry Brown

Position: Senior Financial Analyst, Community Utilities of Pennsylvania

CHEMICAL EXPENSE

Historical Data	2018 [1]	2019 [1]
Chemical Expense	$ 42,507	$ 60,603
Water Division ERC	2,713 [2]	3,226 [2]
Expense Per ERC	$ 15.67	$ 18.79

	HTY 2020 [3]	3-Year Average
Chemical Expense	$ 85,106	$ 62,739
Water Division ERC	**3,291** [4]	
Expense Per ERC	$ 25.86	$ 20.10

Company Claim	FPFTY 2022 [3]
Chemical Expense	$ 113,899 [4]
Water Division ERC	**3,291**
Expense Per ERC	$ 34.61

I&E Recommendation	FPFTY 2022
Water Division ERC	3,291 [4]
Expense Per ERC	$ 20.10
Recommended Allowance	**$ 66,164**
Recommended Adjustment:	**$ (47,735)**

1 Per response to I&E-RE-3-D.
2 ERC sourced from Annual Report unless otherwise specified.
3 Per CUPA W Statement No. 3, Exhibit DMC-1, Section 1, p. 12.
4 Per CUPA W Statement No. 3, Exhibit DMC-2, WP-DC-01.

Rate Case Expense

Company Claim*:	**Total**		**Water Allocation**	
Cost of Current Case	$	258,396	$	118,312
Unamortized Rate Case Expense	$	62,299	$	28,525
Total Rate Case Expense	$	320,695	$	146,837
Amortized over 4 Years	$	80,174	**$**	**36,709**
I&E Recommendation:				
Total Rate Case Expense	$	258,396	$	118,312
Normalized over 4 Years	$	64,599	**$**	**29,578**
I&E Recommended Adjustment			**$**	**(7,131)**

*Per CUPA W Statement No. 3, Exhibit DMC-1, Section 2, p. 8.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025206
Community Utilities of Pennsylvania Inc.	:	
Water Division	:	

VERIFICATION OF THE
BUREAU OF INVESTIGATION AND ENFORCEMENT

I, Zachari Walker, on behalf of the Bureau of Investigation and Enforcement, hereby verify that the documents preliminarily identified as I&E Statement No. 1, I&E Exhibit No. 1, I&E Statement No. 1-SR and I&E Exhibit No. 1-SR were prepared by me or under my direct supervision and control. Furthermore, the facts contained therein are true and correct to the best of my knowledge, information and belief and I expect to be able to prove the same at an Evidentiary Hearing in this matter. This Verification is made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

/s/ *Zachari Walker*
Zachari Walker
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Dated: September 7, 2021

I&E Statement No. 2
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA – WATER DIVISION

Docket No. R-2021-3025206

Direct Testimony

of

Christopher Keller

Bureau of Investigation & Enforcement

Concerning:

Rate of Return

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Christopher Keller. My business address is Pennsylvania Public Utility Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg, PA 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

Q. WHAT IS YOUR EDUCATION AND EMPLOYMENT BACKGROUND?

A. An outline of my education and employment history is attached as Appendix A.

Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.

A. I&E is responsible for protecting the public interest in proceedings before the Commission. I&E's analysis in the proceedings is based on its responsibility to represent the public interest. This responsibility requires the balancing of the interests of ratepayers, the regulated utility, and the regulated community as a whole.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my testimony is to review the base rate filing of Community Utilities of Pennsylvania Inc. – Water Division (CUPA or Company), and make recommendations regarding the Company's rate of return, including capital structure,

cost of long-term debt, the cost of equity, and the overall fair rate of return for the fully projected future test year (FPFTY) ending December 31, 2022.

Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?

A. Yes. I&E Exhibit No. 2 contains schedules that support my direct testimony.

BACKGROUND

Q. WHAT IS THE GENERAL DEFINITION OF RATE OF RETURN IN THE CONTEXT OF A RATE CASE?

A. Rate of return is one of the components of the revenue requirement formula. Rate of return is the amount of revenue an investment generates in the form of net income and is usually expressed as a percentage of the amount of capital invested over a given period of time.

Q. WHAT IS THE REVENUE REQUIREMENT FORMULA?

A. The revenue requirement formula used in base rate cases is as follows: RR = E + D + T + (RB x ROR)

Where:

RR	=	Revenue Requirement
E	=	Operating Expenses
D	=	Depreciation Expense
T	=	Taxes
RB	=	Rate Base
ROR	=	Overall Rate of Return

In the above formula, the rate of return is expressed as a percentage. The calculation of that percentage is independent of the determination of the appropriate rate base value for ratemaking purposes. As such, the appropriate total dollar return is dependent upon the proper computation of the rate of return and the proper valuation of the Company's rate base.

Q. WHAT CONSTITUTES A FAIR AND REASONABLE OVERALL RATE OF RETURN?

A. A fair and reasonable overall rate of return is one that will allow the utility an opportunity to recover those costs prudently incurred by all classes of capital used to finance the rate base during the prospective period in which its rates will be in effect.

The *Bluefield Water Works & Improvements Co. v. Public Service Comm. of West Virginia,* 262 U.S. 679, 692-93 (1923), and the *FPC v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944) cases set forth the principles that are generally accepted by regulators throughout the country as the appropriate criteria for measuring a fair rate of return:

1. A utility is entitled to a return similar to that being earned by other enterprises with corresponding risks and uncertainties, but not as high as those earned by highly profitable or speculative ventures.
2. A utility is entitled to a return level reasonably sufficient to assure financial soundness.
3. A utility is entitled to a return sufficient to maintain and support its credit and raise necessary capital.

4. A fair return can change (increase or decrease) along with economic conditions and capital markets.

Q. EXPLAIN HOW THE OVERALL RATE OF RETURN IS TRADITIONALLY CALCULATED IN BASE RATE PROCEEDINGS.

A. In base rate proceedings, the overall rate of return is traditionally calculated using the weighted average cost of capital method. To calculate the weighted average cost of capital, a company's capital structure must first be determined by comparing the percentage of each capitalization component, which has financed rate base, to total capital. Next, the effective cost rate of each capital structure component must be determined. The historical component of the cost rate of debt can be computed accurately, and any future debt issuances are based on estimates. The cost rate of common equity is not fixed and is more difficult to measure. Because of this difficulty, a proxy group is used as discussed later in this testimony. Next, each capital structure component percentage is multiplied by its corresponding effective cost rate to determine the weighted capital component cost rate. The I&E table in the *"I&E Position"* section below demonstrates the interaction of each capital structure component and its corresponding effective cost rate. Finally, the sum of the weighted cost rates produces the overall rate of return. This overall rate of return is multiplied by the rate base to determine the return portion of a company's revenue requirement.

COMPANY'S RATE OF RETURN CLAIM

Q. WHO IS THE COMPANY'S RATE OF RETURN WITNESS?

A. CUPA witness Dylan W. D'Ascendis is the primary witness addressing rate of return (CUPA Statement No. 5). Mr. D'Ascendis provided analysis for the claimed capital structures, long-term debt, and cost of common equity for CUPA.

Q. PLEASE SUMMARIZE THE COMPANY'S RATE OF RETURN CLAIM.

A. Mr. D'Ascendis recommended the following rate of return for the Company based on its FPFTY ending December 31, 2022 (CUPA Schedule DWD-1, p. 1):

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.94%
Total	100.00%		7.58%

I&E POSITION

Q. PLEASE SUMMARIZE YOUR RATE OF RETURN RECOMMENDATION.

A. Because the Company is providing inadequate and unreasonable service, I recommend the following rate of return for the Company (I&E Exhibit No. 2, Schedule 1):

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	0.00%	0.00%
Total	100.00%		2.64%

However, if the Company was providing reasonable and adequate service, I would have recommended the following rate of return (I&E Exhibit No. 2, Schedule 1):

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.24%	4.41%
Total	100.00%		7.05%

PROXY GROUP

Q. WHAT IS A PROXY GROUP AS USED IN BASE RATE CASES?

A. A proxy group is a set of companies that have similar traits of risk in comparison to the subject utility. This group of companies acts as a benchmark for determining the subject utility's rate of return in a base rate case.

Q. WHAT ARE THE REASONS FOR USING A PROXY GROUP?

A. A proxy group's cost of equity is used as a benchmark to satisfy the long-established guideline of utility regulation that seeks to provide the subject utility with the opportunity to earn a return similar to that of enterprises with corresponding risks and uncertainties.

A proxy group is typically utilized since the use of data exclusively from one company may be less reliable. The lower reliability occurs because the data for one company may be subject to events that can cause short-term anomalies in the marketplace. The rate of return on common equity for a single company could become distorted in these circumstances and would therefore not be representative of

similarly situated companies. Therefore, a proxy group has the effect of smoothing out potential anomalies associated with a single company.

Q. WHAT CRITERIA DID YOU USE IN SELECTING YOUR WATER INDUSTRY PROXY GROUP?

A. The criteria for my proxy group was designed to select companies that are representative of CUPA. I applied the following criteria to Value Line's Water Utility company group:

1. Fifty percent or more of the company's revenues must be generated from the regulated water utility industry;
2. The company's stock must be publicly traded;
3. Investment information for the company must be available from more than one source, which includes Value Line;
4. The company must not be currently involved/targeted in an announced material merger or acquisition; and
5. The company must have four consecutive years of historic earnings data.

Q. WHAT CRITERIA DID MR. D'ASCENDIS USE IN SELECTING HIS WATER PROXY GROUP COMPANIES?

A. Mr. D'Ascendis determined his proxy group of seven water companies by using the following criteria (CUPA Statement No. 5, p. 12, lines 4-18):

1. The company is included in the Water Utility Group of <u>Value Line's Standard Edition</u>;

2. The company has 70% or greater of 2019 total operating income and 70% or greater of 2019 total assets attributable to regulated water operations;

3. At the time of the preparation of Mr. D'Ascendis' testimony, the company must not have publicly announced they were involved in any major merger or acquisition activity;

4. The company must not have cut or omitted its common dividends during the five years ended 2019 or through the time of the preparation of Mr. D'Ascendis' testimony;

5. The company must have Value Line and Bloomberg Professional Services (Bloomberg) adjusted betas;

6. The company must have a positive Value Line five-year dividends per share (DPS) growth rate projection; and

7. The company must have Value Line, Zacks, Yahoo! Finance, or Bloomberg consensus five-year earnings per share (EPS) growth rate projections.

Q. WHAT PROXY GROUP DID YOU USE IN YOUR ANALYSIS?

A. I included the following seven companies in my proxy group (I&E Exhibit No. 2, Schedule 2):

American Water Works	AWK
American States Water Co.	AWR
California Water Services Group	CWT
Middlesex Water Co	MSEX
SJW Group	SJW
Essential Utilities	WTRG
York Water Company	YORW

Q. WHAT PROXY GROUP DID MR. D'ASCENDIS USE IN HIS ANALYSIS?

A. Mr. D'Ascendis utilized the same companies as my proxy group (CUPA Schedule DWD-2, p. 2).

CAPITAL STRUCTURE

Q. WHAT IS A CAPITAL STRUCTURE?

A. A capital structure represents how a firm has financed its rate base with different sources of funds. The primary funding sources are long-term debt and common equity. A capital structure may also include preferred stock and/or short-term debt.

Q. WHAT IS THE COMPANY'S CLAIMED CAPITAL STRUCTURE?

A. The Company's claimed capital structure is summarized in the table below (CUPA Statement No. 5, p. 13, lines 13-15 and CUPA Schedule DWD-1, p. 1):

Type of Capital	Ratio
Long-Term Debt	52.32%
Common Equity	47.68%
Total	100.00%

Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIMED CAPITAL STRUCTURE?

A. Mr. D'Ascendis stated that the capital structure is based on the actual capital structure of CUPA's parent, CORIX Regulated Utilities, Inc. (CRU) at December 31, 2020 and is reasonable and consistent with the range of capital structures maintained by his Utility Proxy Group (CUPA Statement No. 5, p. 13, lines 10-23).

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY'S CAPITAL STRUCTURE?

A. I recommend using the Company's claimed capital structure as presented in the table above.

Q. WHAT IS THE BASIS FOR YOUR CAPITAL STRUCTURE RECOMMENDATION?

A. I recommend using the Company's claimed capital structure as it falls within the range of my proxy group's 2020 capital structures. The 2020 range consists of long-term debt ratios ranging from 44.41% to 59.33% and common equity ratios ranging from 40.67% to 55.25%, with a five-year average of 46.88% for long-term debt and 53.05% for common equity (I&E Exhibit No. 2, Schedule 2).

<u>COST OF LONG-TERM DEBT</u>

Q. WHAT IS THE COMPANY'S CLAIMED COST RATE OF LONG-TERM DEBT?

A. The Company's claimed long-term debt cost rate is 5.05% for the FPFTY (CUPA Statement No. 5, p. 14, lines 3-4).

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY'S COST RATE OF LONG-TERM DEBT?

A. I recommend using the Company's long-term debt cost rate of 5.05%.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO USE THE COMPANY'S COST RATE OF LONG-TERM DEBT?

A. The Company's cost rate of long-term debt is reasonable, as it is representative of the industry. It falls within my proxy group's implied long-term debt cost range of 2.69% to 5.67%, with an average implied long-term debt cost of 4.04% (I&E Exhibit No. 2, Schedule 3). Therefore, I recommend the Company's cost rate of long-term debt be used.

COST OF COMMON EQUITY

COMMON METHODS

Q. WHAT METHODS ARE COMMONLY PRESENTED BY UTILITIES IN DETERMINING THE COST OF COMMON EQUITY?

A. Four methods commonly presented to estimate the cost of common equity are the Discounted Cash Flow (DCF), the Capital Asset Pricing Model (CAPM), the Risk Premium (RP) Method, and the Comparable Earnings (CE) Method.

Q. WHAT IS THE THEORETICAL BASIS FOR THE DCF METHOD?

A. The DCF method is the "dividend discount model" of financial theory, which maintains that the value (price) of any security or commodity is the discounted present value of all future cash flows. The DCF method assumes that investors evaluate stocks in the classical economic framework, which maintains that the value of a financial asset is determined by its earning power, or its ability to generate future cash flows.

1 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CAPM?**

2 A. The CAPM describes the relationship of a stock's investment risk and its market rate
3 of return. It identifies the rate of return investors expect so that it is comparable with
4 returns of other stocks of similar risk. This method hypothesizes that the investor-
5 required return on a company's stock is equal to the return on a "risk free" asset plus
6 an equity premium reflecting the company's investment risk. In the CAPM, two
7 types of risk are associated with a stock: (1) firm-specific risk (unsystematic risk);
8 and (2) market risk (systematic risk), which is measured by a firm's beta. The CAPM
9 allows for investors to receive a return only for bearing systematic risk. Unsystematic
10 risk is assumed to be diversified away, and therefore, does not earn a return.

11

12 **Q. WHAT IS THE THEORETICAL BASIS FOR THE RP METHOD?**

13 A. The theoretical basis for the RP method is a simplified version of the CAPM. The RP
14 method's theory is that common stock is riskier than debt and, thus, investors require
15 a higher expected return on stocks than bonds. In the RP approach, the cost of equity
16 is made up of the cost of debt and a risk premium. While the CAPM uses the market
17 risk premium, it also directly measures the systematic risk of a company group
18 through the use of beta. The RP method does not measure the specific risk of a
19 company.

20

21 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CE METHOD?**

22 A. The CE method utilizes the concept of "opportunity cost." This means that investors
23 will likely dedicate their capital to the investment offering the highest return with

similar risk to alternative investments. Unlike the DCF, CAPM, and the RP methods, the CE method is not market-based and relies upon historic accounting data. The most problematic issue with the CE method is determining what constitutes comparable companies.

Q. WHAT METHOD DO YOU RECOMMEND USING TO DETERMINE AN APPROPRIATE COST OF COMMON EQUITY FOR THE COMPANY?

A. I recommend using the DCF method as the primary method to determine the cost of common equity. I also recommend using the results of the CAPM as a comparison to the DCF results. My recommendation is consistent with the methodology historically used by the Commission in base rate proceedings, even as recently as 2017, 2018, 2020, and 2021.[1]

Q. PLEASE EXPLAIN WHY YOU CHOSE TO USE THE DCF AND CAPM IN YOUR ANALYSIS.

A. I have used the DCF as the primary method for several reasons. First, the DCF is appealing to investors as it is based upon the concept that the receipt of dividends in addition to expected appreciation is the total return requirement determined by the

[1] *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company;* Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.;* Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131; *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

1 market.[2] Second, the use of a growth rate and expected dividend yield are also
2 strengths of the DCF, as this recognizes the time value of money and is forward-
3 looking. Third, the use of the utilities' own, or in this case, the proxy group's stock
4 prices and growth rates directly in the calculation also causes the DCF to be industry
5 and company specific. Finally, the DCF method is the superior method for
6 determining the rate of return for the current economic market because it measures
7 the cost of equity directly.

8 I have included a CAPM analysis as a comparison because the CAPM and the
9 DCF include inputs that allow the results to be specific to the utility industry,
10 although the CAPM is far less responsive to changes in the industry than the DCF.
11 The CAPM is based on the performance of U.S. Treasury bonds and the performance
12 of the market as measured through the S&P 500 and is company-specific only
13 through the use of beta. Beta reflects a stock's volatility relative to the overall market,
14 thereby incorporating an industry-specific aspect to the CAPM, but only as a measure
15 of how reactive the industry is compared to the market as a whole. Although changes
16 in the utility industry are more likely to be accurately reflected in the DCF, which
17 uses the companies' actual prices, dividends, and growth rates, I have included the
18 results of my CAPM analysis because changes in the market, whether as a whole or
19 specific to the utility industry, affect the outcome of each method in different ways.
20 Although I have chosen to use the CAPM as a secondary method, it does have several
21 disadvantages and should not be used as a primary method.

[2] David C. Parcell, "The Cost of Capital – A Practitioner's Guide," 2010 Edition, p. 151.

1 **Q. EXPLAIN THE DISADVANTAGES OF THE CAPM.**

2 A. The CAPM, and the RP method by virtue of its similarities to the CAPM, give results
3 that indicate to an investor what the equity cost rate should be if current economic and
4 regulatory conditions are the same as those present during the historical period in
5 which the risk premiums were determined. This is because beta, which is the only
6 company-specific variable in the CAPM model, measures the *historical* volatility of a
7 stock compared to the *historical* overall market return. Reliance on historical values
8 is especially problematic now given the recent impact of the coronavirus on economic
9 conditions. Although the CAPM and RP results can be useful to investors in making
10 rational buy and sell decisions within their portfolios, the DCF method is the superior
11 method for determining the rate of return for the current economic market and
12 measuring the cost of equity directly. The CAPM and the RP methods are less
13 reliable indicators because they measure the cost of equity indirectly and risk
14 premiums vary depending on the debt and equity being compared. Also, regulators
15 can never be certain that economic and regulatory conditions underlying the historical
16 period during which the risk premiums were calculated are the same today or will be
17 the same in the future.
18

19 **Q. IS THERE ANY ACADEMIC EVIDENCE THAT QUESTIONS THE**
20 **CREDIBILITY OF THE CAPM MODEL?**

21 A. Yes. An article, "Market Place; A Study Shakes Confidence in the Volatile-Stock
22 Theory," which appeared in the *New York Times* on February 18, 1992, summarized a

CAPM study conducted by professors Eugene F. Fama and Kenneth R. French.[3] Their study examined the importance of beta, CAPM's risk factor, in explaining returns on common stock. In CAPM theory a stock with a higher beta should have a higher expected return. However, they found that the model did not do well in predicting actual returns and suggested the use of more elaborate multi-factor models.

A more recent article, "The Capital Asset Pricing Model: Theory and Evidence," which appeared in the *Journal of Economic Perspectives,* states that "the attraction of the CAPM is that it offers powerful and intuitively pleasing predictions about how to measure risk and the relation between expected return and risk. Unfortunately, the empirical record of the model is poor - poor enough to invalidate the way it is used in applications."[4] As a result, I conclude that the CAPM's relevance to the investment decision making process does not carry over into the regulatory rate setting process.

Q. PLEASE EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE RP METHOD FROM YOUR ANALYSIS.

A. The RP method is excluded because it is a simplified version of the CAPM and is subject to the same faults listed above. Additionally, unlike the CAPM, the RP method does not recognize company-specific risk through beta.

---

[3] Berg, Eric N. "Market Place; A Study Shakes Confidence in the Volatile-Stock Theory" *The New York Times*, 18 Feb 1992: *nytimes.com* Web. 23 Mar 2016.

[4] Fama, Eugene F. and French, Kenneth R., "The Capital Asset Pricing Model: Theory and Evidence." *Journal of Economic Perspectives* (2004): Volume 18, Number 3, pp. 25-46.

Q. EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE CE METHOD FROM YOUR ANALYSIS.

A. The CE method is excluded because the choice of which companies are comparable is highly subjective, and it is debatable whether historic accounting values are representative of the future. Moreover, its historical usage in this regulatory forum has been minimal.

SUMMARY OF THE COMPANY'S RESULTS

Q. WHAT ARE THE RESULTS OF THE COMPANY'S COST OF EQUITY ANALYSES?

A. Mr. D'Ascendis used the DCF, CAPM, and the RP methods in analyzing the Company's cost of equity. Mr. D'Ascendis also used the Predictive Risk Premium Method (PRPM) and the Empirical Capital Asset Pricing Model (ECAPM) in forming his recommendations under the RP and the CAPM methods, respectively. Mr. D'Ascendis applied these methods using his proxy group of regulated water utilities and averaged the results of the methods for his non-price regulated proxy group. Mr. D'Ascendis then listed the results for each method for the regulated utility group and the average of the median and mean of the results of the methods for the non-price regulated group. Finally, he recommended that the cost of equity be increased by 100 basis points due to the Company's small size. Ultimately, Mr. D'Ascendis opined that a cost of equity of 10.35% is warranted (CUPA Statement No. 5, p. 5, line 17 through p. 7, line 3 and CUPA Schedule DWD-1, p. 2).

I&E RECOMMENDATION

RECOMMENDATION BASED ON INADEQUATE AND UNREASONABLE SERVICE

Q. WHAT IS YOUR RECOMMENDATION FOR THE APPROPRIATE COST OF COMMON EQUITY IN THIS PROCEEDING?

A. My analysis indicates a cost of common equity of 9.24% (I&E Exhibit No. 2, Schedule 1), which is explained below; however, **in this proceeding**, I recommend a cost of equity of **0.00%** because the Company is not meeting its obligation to provide adequate and reasonable service to its customers.

Q. PLEASE EXPLAIN YOUR BASIS FOR RECOMMENDING A 0.00% RETURN ON EQUITY FOR THE COMPANY, TAKING INTO ACCOUNT THE STANDARDS SET FORTH BY THE LANDMARK BLUEFIELD AND HOPE RATE CASES.

A. The Bluefield and Hope cases are landmarks that established standards used to determine a fair rate of return for regulated utility companies, as I explained earlier in my testimony. However, this proceeding involves extraordinary circumstances in which the Company is not meeting its obligation to provide adequate and reasonable service to its water customers, which is required by Section 1501 of the Public Utility Code:

> Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service and facilities, and shall make all such repairs, changes, alterations, substitutions, extensions, and improvements in or to such service and facilities as shall be necessary or proper for the accommodations, convenience, and

> safety of its patrons, employees, and the public. Such service also shall be reasonable continuous and without unreasonable interruptions or delay. Such service and facilities shall be in conformity with the regulations and orders of the commission. …

If service is inadequate, the Commission has the authority to disallow a rate increase under Section 526(a) of the Public Utility Code:

> The commission may reject, in whole or in part, a public utility's request to increase its rates where the commission concludes, after hearing ,that the service rendered by the public utility is inadequate in that it fails to meet quantity or quality for the type of service provided.

Q. IS THE COMPANY PROVIDING ADEQUATE AND REASONABLE SERVICE?

A. Based on the concerns expressed by CUPA customers, no. ALJ Buckley conducted one telephonic public input hearing on June 29, 2021 at 6:00 p.m. The hearing concluded at approximately 11:30 p.m., and, over the course of 5.5 hours, 42 customers, including three Pennsylvania State Representatives, testified about the amount of the proposed rate increase and raised various concerns regarding water quality. In addition to lengthy public input testimony, more than 100 customer complaints have been filed in the proceeding. Furthermore, Representative Madden, whose constituents live in the Penn Estates Division, testified at the Public Input Hearing that her office has received approximately 45-50 emails about this rate increase and has received phone calls (Public Input Hearing Transcript, p. 44).

Q. PLEASE SUMMARIZE THE CONCERNS RAISED BY CUPA CUSTOMERS AT THE PUBLIC INPUT HEARING.

A. Virtually every customer testified about the affordability of the rate increase, especially when combined with the impact of COVID-19. In addition, as summarized in the tables below, many customers raised the following service issues: (1) water quality; (2) damage to home appliances; and (3) customer service/notice.

Table 1: Summary of Water Quality Complaints

Customer	Division	Issue
Representative Madden	Penn Estates	Sediment; Stained laundry; Ring around faucets/tub
Ms. Marino	Tamiment	Ring around toilet/tub
Ms. Krupinski	Penn Estates	Do not consume water; Ring around tub; 10 day water outage
Ms. Grana	Penn Estates	Do not consume water; Skin Irritation; 10 day water outage
Ms. Hasic	Tamiment	Skin irritation; Stained laundry
Ms. Gilchrist	Tamiment	Do not consume water; Ring around toilet
Mr. Flagg	Penn Estates	Do not consume water; 10 day water outage
Mr. Montalvo	Penn Estates	Brown water; Hydrant not flushed; Leaks not located
Mr. Kovalski	Tamiment	2020 Water Quality Report Violations; Ring around toilet; Odor
Mr. Szabo	Tamiment	Do not consume water
Mr. Sampere	Tamiment	Odor; Do not consume water; Skin Irritation
Ms. Nicholson	Penn Estates	Stained laundry; Brown water
Ms. Cline	Tamiment	Low pressure
Ms. Ramano	Tamiment	Sediment; Stained laundry; Do not consume water; Odor
Ms. Mazzie	Penn Estates	10 day water outage

Table 2: Summary of Appliance Issues

Customer/Division	Division	Issue
Mr. Donahue	Tamiment	Hot water heater
Mr. Flagg	Penn Estates	Hot water heater
Mr. Sampere	Tamiment	Hot water heater; Multiple appliances
Ms. Nicholson	Penn Estates	Hot water heater
Mr. Churchin	Tamiment	Pipe corrosion; Hot water heater
Ms. Cline	Tamiment	Pipe corrosion; Hot water heater; Washing machine

Table 3: Summary of Customer Service/ Notice

Customer/Division	Division	Issue
Ms. Bouco	Penn Estates	Water turned off; Hard to contact Company
Ms. Krupinski	Penn Estates	Timely notice of contamination
Ms. Grana	Penn Estates	Timely notice of contamination
Mr. Flagg	Penn Estates	Timely notice of contamination; No return call
Mr. Montalvo	Penn Estates	Timely notice of outages/contamination
Ms. Nicholson	Penn Estates	Hard to contact Company

Q. IN ADDITION TO THE CONCERNS RAISED BY CUSTOMERS, HAVE THERE BEEN ANY RECENT PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION VIOLATIONS IN THE COMPANY'S SERVICE TERRITORY?

A. Yes. CUPA's 2019 Annual Water Quality Report in the Penn Estates division noted twelve Pennsylvania Department of Environment Protection (PA DEP) violations

regarding monitoring drinking water for contaminants, record keeping and timely reporting to PA DEP (I&E Exhibit No. 2, Schedule 4) and one PA DEP violation in its 2020 Annual Quality Report concerning its failure to properly test for a contaminant (I&E Exhibit No. 2, Schedule 5). Similarly, in the Tamiment division, the 2019 Annual Water Quality Report states that the Company received a recordkeeping violation and failed to monitor contaminants (I&E Exhibit No. 2, Schedule 6) and failed to meet two monitoring requirements and report two sample results to PA DEP by the required date in the 2020 Annual Water Quality Report (I&E Exhibit No. 2, Schedule 7).

<u>SUMMARY OF I&E RETURN ON EQUITY RECOMMENDATION</u>

Q. SUMMARIZE YOUR RETURN ON EQUITY RECOMMENDATION FOR THE COMPANY.

A. Under ordinary circumstances, my analysis, using the DCF model and corresponding inputs from my proxy group, would provide a fair rate of return on equity for the Company, and my CAPM would serve as a comparison to validate my DCF result. Unfortunately, this proceeding involves extraordinary circumstances where the Company is demonstrably providing inadequate and unreasonable service to its ratepayers at unreasonably high rates. I am informed by counsel that, under these circumstances, 66 Pa C.S.A. §526(a) authorizes the Commission to deny a public utility's request to increase its rates, in whole or in part, when that utility is found inadequate with respect to quantity or quality for the type of service provided. As stated above, I&E is charged with protecting the public interest in proceedings before

the Commission. Passing along any additional cost of equity to the ratepayers of the Company is not in the public interest. Therefore, I recommend a 0.00% return on equity for the Company.

RETURN ON EQUITY ANALYSIS WITH THE COMPANY PROVIDING ADEQUATE SERVICE

Q. IF THE COMPANY MET ITS OBLIGATION TO PROVIDE ADEQUATE AND REASONABLE SERVICE, WHAT WOULD YOUR RECOMMENDATION BE FOR THE COMPANY'S COST OF EQUITY?

A. If the Company met its obligation to provide adequate and reasonable service, I would recommend a cost of common equity of 9.24% (I&E Exhibit No. 2, Schedule 1).

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on the use of the DCF method. As explained below, I used my CAPM result only to present to the Commission a comparison to my DCF results. My DCF analysis uses a spot dividend yield, a 52-week dividend yield, and earnings growth forecasts.

DISCOUNTED CASH FLOW

Q. PLEASE EXPLAIN YOUR DCF ANALYSIS.

A. My analysis employs the constant growth DCF model as portrayed in the following formula:

$$K = D_1/P_0 + g$$

Where:

K	=	Cost of equity
D_1	=	Dividend expected during the year
P_0	=	Current price of the stock
g	=	Expected growth rate

When a forecast of D_1 is not available, D_0 (the current dividend) must be adjusted by one half of the expected growth rate to account for changes in the dividend paid in period one. As forecasts for each company in my proxy group were available from Value Line, no dividends were adjusted for the purpose of my analysis.

Q. PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELDS USED IN YOUR DCF ANALYSIS.

A. A representative dividend yield must be calculated over a time frame that avoids the problems of both short-term anomalies and stale data series. For my DCF analysis, the dividend yield calculation places equal emphasis on the most recent spot and the 52-week average dividend yields. The following table summarizes my dividend yield computations for the proxy group (I&E Exhibit No. 2, Schedule 8):

Seven-Company Proxy Group	Dividend Yield
Spot	1.87%
52-week average	1.96%
Average	1.91%

Q. WHAT INFORMATION DID YOU RELY UPON TO DETERMINE YOUR EXPECTED GROWTH RATE?

A. I have used five-year projected growth rate estimates from Value Line, Yahoo! Finance, Zacks, and Morningstar.

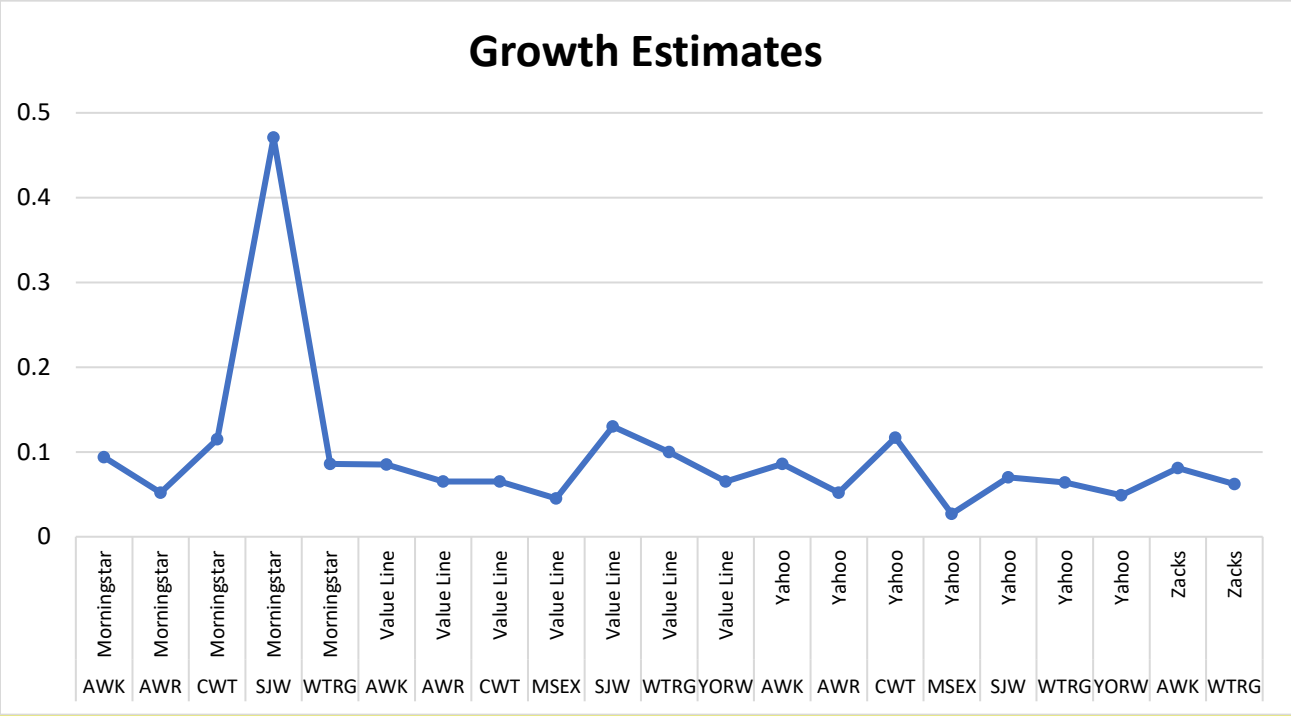
Q. WHAT WERE THE RESULTS OF YOUR FORECASTED EARNINGS GROWTH RATES?

A. The expected average growth rates for the seven-company proxy group ranged from 2.70% to 47.10% with an overall average of 9.09%. For the purpose of determining the growth estimate, I subsequently eliminated SJW Group's Morningstar growth estimate of 47.10% to determine a new adjusted average of 7.33% (I&E Exhibit No. 2, Schedule 9).

Q. WHY DID YOU ELIMINATE SJW GROUP'S MORNINGSTAR PROJECTED GROWTH RATE?

A. While the use of a proxy group largely smooths out various anomalies, Morningstar's growth projection for SJW Group is extremely inconsistent and would have an unreasonable and unwarranted impact on my DCF analysis. This would adversely affect my recommendation for the Company's cost of common equity because it is harmful to ratepayers by creating an unjustified increase in return on equity and consequently pressures rates upward, which is not in the public interest. Morningstar's estimate of 47.10% is more than five times higher and greater than four standard deviations over the originally calculated 9.09% overall average.

Furthermore, the estimate is more than six times higher than the average of the remaining estimates. Additionally, I was unable to find any explanation or justification of why this estimate was so high. The following chart illustrates just how much of an outlier this result is:



Q. WHAT IS THE RESULT OF YOUR DCF ANALYSIS BASED ON YOUR RECOMMENDED DIVIDEND YIELD AND GROWTH RATE?

A. The results of my DCF analysis are calculated as follows (I&E Exhibit No. 2, Schedule 10):

K	=	D_1/P_0	+	g
9.24%	=	1.91%	+	7.33%

1 **CAPITAL ASSET PRICING MODEL**

2 **Q. PLEASE EXPLAIN YOUR CAPM ANALYSIS.**

3 A. My analysis employs the traditional CAPM as portrayed in the following formula:

4 $$K = R_f + \beta(R_m - R_f)$$

5 Where:

6 K = Cost of equity

7 R_f = Risk-free rate of return

8 R_m = Expected rate of return on the overall stock market

9 β = Beta measures the systematic risk of an asset

10

11 **Q. WHAT IS BETA AS EMPLOYED IN YOUR CAPM ANALYSIS?**

12 A. Beta is a measure of the systematic risk of a stock in relation to the rest of the stock
13 market. A stock's beta is estimated by calculating the linear regression of a stock's
14 return against the return on the overall stock market. The beta of a stock with a price
15 pattern identical to that of the overall stock market will equal one. A stock with a
16 price movement that is greater than the overall stock market will have a beta that is
17 greater than one and would be described as having more investment risk than the
18 market. Conversely, a stock with a price movement that is less than the overall stock
19 market will have a beta of less than one and would be described as having less
20 investment risk than the market.

21

22 **Q. HOW DID YOU DETERMINE YOUR BETA FOR YOUR CAPM ANALYSIS?**

23 A. In estimating an equity cost rate for my proxy group of seven water companies, I used

the average of the betas for the companies as provided in the Value Line Investment Survey. The average beta for my proxy group is 0.78 (I&E Exhibit No. 2, Schedule 11).

Q. WHAT RISK-FREE RATE OF RETURN HAVE YOU USED FOR YOUR FORECASTED CAPM ANALYSIS?

A. I used the risk-free rate of return (R_f) from the projected yield on 10-year Treasury Notes. While the yield on the short-term T-Bill is a more theoretically correct parameter to represent a risk-free rate of return, it can be extremely volatile. The volatility of short-term T-Bills is directly influenced by Federal Reserve policy. At the other extreme, the 30-year Treasury Bond exhibits more stability but is not risk-free. Long-term Treasury Bonds have substantial maturity risk associated with market risk and the risk of unexpected inflation. Long-term treasuries normally offer higher yields to compensate investors for these risks. As a result, I used the yield on the 10-year Treasury Note because it mitigates the shortcomings of the other two alternatives. Additionally, the Commission has recently recognized the 10-year Treasury Note as the superior measure of the risk-free rate of return.[5] The forecasted yield on the 10-year Treasury Note, as can be seen in Blue Chip Financial Forecasts, is expected to be between 1.80% and 2.10% from the third quarter of 2021 through the third quarter of 2022, and it is forecasted to be 2.90% from 2023-2027. For my forecasted CAPM analysis, I used 2.12%, which is the average of all the yield

[5] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 99.

forecasts I observed (I&E Exhibit No. 2, Schedule 12).

Q. HOW DID YOU DETERMINE THE RETURN ON THE OVERALL STOCK MARKET IN YOUR FORECASTED CAPM ANALYSIS?

A. To arrive at a representative expected return on the overall stock market, I observed Value Line's 1700 stocks and the S&P 500. Value Line expects its universe of 1700 stocks to have an average yearly return of 8.48% over the next three to five years based on a forecasted dividend yield of 1.70% and a yearly index appreciation of 30%. The S&P 500 index is expected to have an average yearly return of 14.87% over the next five years based upon Barron's forecasted dividend yield of 1.47% and Morningstar's average expected increase in the S&P 500 index of 13.40% (I&E Exhibit No. 2, Schedule 13).

Q. WHAT IS THE EXPECTED RETURN ON THE OVERALL STOCK MARKET BASED ON YOUR FORECASTED ANALYSIS?

A. The expected return on the overall market is 11.68% for my forecasted analysis (I&E Exhibit No. 2, Schedule 13).

Q. WHAT IS THE COST OF EQUITY RESULT FROM YOUR CAPM ANALYSIS?

A. The result of my analysis is as follows (I&E Exhibit No. 2, Schedule 14):

$$K = R_f + \beta(R_m - R_f)$$

$$9.56\% = 2.12\% + 0.78\ (11.68\% - 2.12\%)$$

1 **CRITIQUE OF MR. D'ASCENDIS' PROPOSED COST OF EQUITY**

2 **Q. DO YOU AGREE WITH MR. D'ASCENDIS' PROPOSED COST OF**
3 **EQUITY?**

4 A. No. I disagree with Mr. D'Ascendis' proposed cost of equity analysis for several
5 reasons. First, I disagree with the weights given to the results of his DCF, CAPM,
6 RP, PRPM, and ECAPM analyses in his recommendation. Second, I disagree with
7 the use of a proxy group of companies that are not regulated water utilities which was
8 used in the calculation of the Company's cost of equity. Third, I disagree with his
9 inclusion of a size adjustment. Finally, I disagree with his reliance on the 30-year
10 Treasury Bond for his risk-free rate.

11

12 **WEIGHTS GIVEN TO THE CAPM AND RP METHODS**

13 **Q. DO YOU AGREE WITH MR. D'ASCENDIS' RELIANCE ON THE CAPM**
14 **AND RP MODELS?**

15 A. No. While I am not opposed to providing the Commission the results of the CAPM
16 for a point of comparison to the results of the DCF calculation, I am opposed to
17 giving the CAPM and RP considerable weight. For the reasons discussed above,
18 including my reference to recent Commission orders, it is not appropriate to give the
19 CAPM and RP models similar weight to the DCF as Mr. D'Ascendis has done in
20 creating his recommended cost of equity range (CUPA Statement No. 5, p. 6, line 7).
21 As discussed above, the CAPM measures the cost of equity indirectly and can be
22 manipulated by the time period chosen. Since the RP is a simplified version of the
23 CAPM, it suffers these same flaws. Also, as discussed in more detail below, the

results of the lesser-used ECAPM and PRPM models should also be rejected. I have not used the ECAPM because it only weights the results of the CAPM in order to flatten the Security Market Line, but it does not correct the previously discussed problems with the CAPM. I have not used Mr. D'Ascendis' Predicative Risk Premium Model, because it is not a widely accepted method and investors must have a statistical software package to use the PRPM.

PREDICTIVE RISK PREMIUM MODEL

Q. WHAT IS THE PREDICTIVE RISK PREMIUM MODEL?

A. The PRPM is a method published in August 2011 by Pauline M. Ahern, Frank J. Hanley, and Richard A. Michelfelder in the article *New Approach to Estimating the Cost of Common Equity Capital for Public Utilities.*[6] Mr. D'Ascendis' PRPM requires Eviews© statistical software to compute (CUPA Statement No. 5, pp. 18-19).

Q. DO YOU AGREE WITH MR. D'ASCENDIS' USE OF THE PRPM?

A. No. Mr. D'Ascendis' PRPM is not a commonly used method and cannot be evaluated or recreated without the software. I am also unaware of any state that has accepted the use of the PRPM. Finally, the PRPM does not solve the problem of the RP method because it is still an indirect measure of the cost of equity, and the PRPM

[6] Ahern, Pauline M., Hanley, Frank J., Michelfelder, Richard A. (December 2011, Volume 40, Issue 3). *New Approach to Estimating the Cost of Common Equity Capital for Public Utilities*. Journal of Regulatory Economics, pp. 261-278.

complicates the RP method with the introduction of a measurement that requires the use of specialized software.

EMPIRICAL CAPITAL ASSET PRICING MODEL

Q. WHAT DOES MR. D'ASCENDIS CLAIM IS THE BASIS FOR HIS USE OF THE ECAPM?

A. Mr. D'Ascendis opined that the Security Market Line (SML) defined by the CAPM is not as steeply sloped as the predicted SML (CUPA Statement No. 5, p. 29, lines 16-19). Mr. D'Ascendis used a formula to account for the systematic risk that is not accounted for with beta in the CAPM formula. This methodology, called ECAPM, uses a factor, alpha, to account for the additional systematic risk not captured by beta.

Q. DO YOU AGREE WITH MR. D'ASCENDIS' USE OF THE ECAPM?

A. No. Although some studies indicate that the CAPM does not properly define the SML, the degree to which the CAPM would require adjustment varies widely and is dependent on the inputs used to determine the difference between the SML and actual historical figures. I was unable to find the value of alpha Mr. D'Ascendis has chosen to use to adjust the SML in either Mr. D'Ascendis' testimony or exhibits. The ECAPM attempts to add a factor, alpha, to "correct" the perceived underestimation of the cost of capital for betas lower than 1 but as identified in *New Regulatory Finance* by Roger A. Morin, estimations for alpha range from -9.61% to 13.56%.[7] This large

[7] Morin, Roger A. (2006). *New Regulatory Finance.* Vienna, VA: Public Utilities Reports, Inc.

range demonstrates the difficulty of accurately and precisely measuring the difference between what the CAPM is estimating and actual results. The use of the ECAPM in estimating the cost of capital does not increase the validity of the result but merely adds another difficult to measure factor to the CAPM. The CAPM's attempts to measure a variable that changes; the difference between a risk-free rate and the market is not a constant factor. The ECAPM attempts to correct the CAPM's inability to accurately predict the cost of capital but does so through an additional factor that corrects none of the underlying problems of the model.

<u>DOMESTIC NON-PRICE REGULATED COMPANIES</u>

Q. DOES MR. D'ASCENDIS RELY ON ANY MARKET DATA INPUTS SPECIFIC TO COMPANIES THAT ARE NOT REGULATED UTILITIES?

A. Yes. Mr. D'Ascendis asserted that in the *Hope* and *Bluefield* cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Consequently, he assembled a proxy group consisting of 26 non-price regulated firms which he asserts are comparable in terms of total risk to the Utility Proxy Group (CUPA Statement No. 5, pp. 35-36). After forming his proxy group of 26 non-price regulated firms, Mr. D'Ascendis calculated common equity costs with data inputs specific to these companies using the DCF, RP, and CAPM methods (CUPA Schedule DWD-7). The average of the mean and median results of these analyses of 11.08% was incorporated into Mr. D'Ascendis' final calculation of the Company's return on equity of 10.35% (CUPA Schedule DWD-1, p. 2).

Q. DO YOU AGREE WITH MR. D'ASCENDIS' APPROACH OF USING THE MARKET DATA OF NON-UTILITY COMPANIES TO CALCULATE CUPA'S RETURN ON EQUITY?

A. No. The process of choosing a proxy group of non-utility companies similar in risk to CUPA is highly speculative and subjective. In effect, Mr. D'Ascendis blends the CE approach into the DCF, RP, and CAPM models. As stated earlier, the Commission has ruled on the use of the CE approach, specifically, the use of non-utility companies in comparable groups, and stated:

> The use of nonregulated companies as a comparable group for regulated firms requires numerous unsupportable assumptions which results in a highly speculative finding.[8]

If the non-price regulated company proxy group is truly similar in total risk to CUPA, I would expect to see similar results in the calculation of the DCF, RP, and CAPM between the Water Utility and Non-Price Regulated Company proxy groups used by Mr. D'Ascendis. However, the Non-Price Regulated Company proxy groups results were higher for all three methods. This clearly demonstrates the Commission's ruling that "the use of non-regulated companies as a comparable group for regulated firms …. results in a highly speculative finding."

[8] *Pennsylvania Public Utility Commission v. Philadelphia Electric Co.* 33 PUR 4th 319, 341 (Pa PUC 1980).

1 **SIZE ADJUSTMENT**

2 **Q. WHAT SIZE ADJUSTMENT HAS MR. D'ASCENDIS PROPOSED?**

3 A. Mr. D'Ascendis added 100 basis points to his cost of common equity because he
4 opined that smaller companies are less able to cope with significant events affecting
5 sales, revenues, or earnings. He further stated that the loss of revenue from a few
6 larger customers would have a greater effect on a small company. Mr. D'Ascendis
7 relied upon technical literature including Duff & Phelps' 2020 Valuation Handbook –
8 U.S. Guide to Cost of Capital (D&P – 2020), a Fama and French study entitled "The
9 Capital Asset Pricing Model: Theory & Evidence" and Professor Eugene Brigham's
10 textbook entitled "Fundamentals of Finance Management." Mr. D'Ascendis
11 quantified his size adjustment based on size premiums for portfolios of New York
12 Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked
13 by deciles for the 1926 to 2019 period. While Mr. D'Ascendis' proxy group
14 companies fell in the 4th decile, he asserted that CUPA fell in the 10th decile for size.
15 He stated that while this indicates an upward equity risk premium adjustment of 426
16 basis points, he chose an upward adjustment of 100 basis points (CUPA Statement
17 No. 5, pp. 39-44).
18

19 **Q. DO YOU AGREE WITH MR. D'ASCENDIS' SIZE ADJUSTMENT?**

20 A. No. Mr. D'Ascendis' proposed size adjustment is unnecessary because the technical
21 literature he cited supporting investment adjustments related to the size of a company
22 is not specific to the utility industry; therefore, it has no relevance in this proceeding.

Q. IS THERE ACADEMIC EVIDENCE THAT SUPPORTS YOUR CONCLUSION THAT THE SIZE ADJUSTMENT FOR RISK IS NOT APPLICABLE TO UTILITY COMPANIES?

A. Yes. In the article "Utility Stocks and the Size Effect: An Empirical Analysis," Dr. Annie Wong concludes:

> The objective of this study is to examine if the size effect exists in the utility industry. After controlling for equity values, there is some weak evidence that firm size is a missing factor from the CAPM for the industrial but not for utility stocks. This implies that although the size phenomenon has been strongly documented for the industriales, the findings suggest that there is no need to adjust for the firm size in utility rate regulation.[9]

CUPA has presented no evidence to support application of a non-utility study regarding a size adjustment for risk to a utility setting. Absent any credible article to refute Dr. Wong's findings, Mr. D'Ascendis' size adjustment to his cost of common equity results should be rejected. Additionally, and more importantly, the Commission has recently rejected the application of a size adjustment to the cost of equity calculation.[10]

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[9] Dr. Annie Wong, "Utility Stocks and the Size Effect: An Empirical Analysis," *Journal of Midwest Finance Association* 1993, pp. 95-101.

[10] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 100.

RISK-FREE RATE

Q. WHAT RISK-FREE RATE DID MR. D'ASCENDIS USE IN HIS RP AND CAPM MODELS?

A. Mr. D'Ascendis calculated his risk-free rate of 2.48% by using the 30-year Treasury Bonds (CUPA Statement No. 5, p. 32, lines 6-12).

Q. DO YOU AGREE WITH MR. D'ASCENDIS' USE OF THE 30-YEAR TREASURY BOND TO DETERMINE THE RISK-FREE RATE?

A. No. As discussed above, long-term Treasury Bonds have substantial maturity risk associated with the market risk and the risk of unexpected inflation and normally offer higher yields to compensate investors for these risks. Using the 10-year Treasury Note is more appropriate to balance the short-term volatility risk and the long-term inflation risk.

OVERALL RATE OF RETURN RECOMMENDATION

Q. WHAT IS THE COMPANY'S PROPOSED OVERALL RATE OF RETURN?

A. The Company's proposed overall rate of return is 7.58% (CUPA Statement No. 5, p. 5, line 6).

Q. WHAT IS I&E'S RECOMMENDED OVERALL RATE OF RETURN?

A. I recommend an overall rate of return for the Company of 2.64% because the Company is not meeting its obligation to provide adequate and reasonable service to its customers (I&E Exhibit No. 2, Schedule 1). However, if the Company was

providing reasonable and adequate service, I would have recommended an overall rate of return for the Company of 7.05% (I&E Exhibit No. 2, Schedule 1).

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

PROFESSIONAL AND EDUCATIONAL EXPERIENCE
CHRISTOPHER KELLER

Professional Experience

January 2014 to Present
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania
Bureau of Investigation & Enforcement

September 2008 to January 2014
Insurance Company Financial Analyst
Pennsylvania Insurance Department, Harrisburg, Pennsylvania
Bureau of Licensing & Financial Analysis

Education and Training

FAI Utility Finance and Accounting for Financial Professionals, Boston, MA
May 21-23, 2014

York College of Pennsylvania, York, Pennsylvania
Master of Business Administration, Finance Concentration, 2008
Bachelor of Science, Accounting, 2006

Testimony Submitted

I have testified and/or submitted testimony in the following proceedings:

- Docket No. R-2021-3025652 – UGI Utilities, Inc. – Gas Division (1307(f)) (proceeding ongoing)
- Docket No. R-2021-3024750 – Duquesne Light Company (O&M and ROR) (proceeding ongoing)
- Docket No. R-2021-3024296 – Columbia Gas of Pennsylvania, Inc. (ROR) (proceeding ongoing)
- Docket No. R-2020-3018929 – PECO Energy Company – Gas Division (ROR)
- Docket No. P-2020-3020914 – Twin Lakes Utilities, Inc. (529 Proceeding) (proceeding ongoing)
- Docket No. R-2020-3018835 – Columbia Gas of Pennsylvania, Inc. (ROR)
- Docket No. R-2020-3019680 – UGI Utilities, Inc. (1307(f))
- Docket No. P-2020-3019356 – PPL Electric Utilities Corporation (DSP)
- Docket No. R-2019-3015162 – UGI Utilities, Inc. – Gas Division (ROR)
- Docket No. R-2019-3010955 – City of Lancaster – Sewer Fund (O&M)
- Docket No. R-2019-3009647 – UGI Utilities, Inc. – Gas Division (1307(f))
- Docket No. R-2018-3006818 – Peoples Natural Gas Company LLC (O&M)
- Docket No. R-2018-3000124 – Duquesne Light Company (O&M)

Testimony Submitted (Continued)

I have testified and/or submitted testimony in the following proceedings:

- Docket No. R-2018-3001631 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2018-3001632 – UGI Penn Natural Gas, Inc. (1307(f))
- Docket No. R-2018-3001633 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2018-2645938 – Philadelphia Gas Works (1307(f))
- Docket No. P-2017-2637855 – Metropolitan Edison Company (DSP)
- Docket No. P-2017-2637857 – Pennsylvania Electric Company (DSP)
- Docket No. P-2017-2637858 – Pennsylvania Power Company (DSP)
- Docket No. P-2017-2637866 – West Penn Power Company (DSP)
- Docket No. R-2017-2602627 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2017-2602638 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2017-2586783 – Philadelphia Gas Works (O&M)
- Docket No. R-2017-2587526 – Philadelphia Gas Works (1307(f))
- Docket No. I-2016-2526085 – Delaware Sewer Company (529 Proceeding)
- Docket No. R-2016-2531550 – Citizens' Electric Company (O&M)
- Docket No. R-2016-2531551 – Wellsboro Electric Company (O&M)
- Docket No. R-2016-2537349 – Metropolitan Edison Company (CWC and CAP)
- Docket No. R-2016-2537352 – Pennsylvania Electric Company (CWC and CAP)
- Docket No. R-2016-2537355 – Pennsylvania Power Company (CWC and CAP)
- Docket No. R-2016-2537359 – West Penn Power Company (CWC and CAP)
- Docket No. R-2016-2543311 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2015-2518438 – UGI Utilities, Inc. – Gas Division (CWC and USP)
- Docket No. P-2015-2511333 – Metropolitan Edison Company (DSP)
- Docket No. P-2015-2511351 – Pennsylvania Electric Company (DSP)
- Docket No. P-2015-2511355 – Pennsylvania Power Company (DSP)
- Docket No. P-2015-2511356 – West Penn Power Company (DSP)
- Docket No. R-2015-2468056 – Columbia Gas of Pennsylvania, Inc. (O&M)
- Docket No. P-2014-2404341 – Delaware Sewer Company (529 Investigation)
- Docket No. R-2014-2452705 – Delaware Sewer Company (O&M)
- Docket No. R-2014-2428304 – Borough of Hanover – Water (O&M)
- Docket No. R-2014-2419774 – Wellsboro Electric Company (Customer Choice Support Charge)
- Docket No. R-2014-2420279 – UGI Central Penn Gas, Inc. (1307(f))

Assisted with the Following Cases

- Docket No. R-2017-2631441 – Reynolds Water Company (ROR)
- Docket No. R-2016-2580030 – UGI Penn Natural Gas, Inc. (ROR)
- Docket No. R-2014-2462723 – United Water Pennsylvania (CWC)
- Docket No. R-2014-2428742 – West Penn Power Company (CWC)
- Docket No. R-2014-2428743 – Pennsylvania Electric Company (CWC)
- Docket No. R-2014-2428744 – Pennsylvania Power Company (CWC)
- Docket No. R-2014-2428745 – Metropolitan Edison Company (CWC)
- Docket No. R-2013-2397353 – Pike County Light & Power Company (Gas) (O&M)
- Docket No. R-2013-2397237 – Pike County Light & Power Company (Electric) (O&M)

I&E Exhibit No. 2
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA – WATER DIVISION

Docket No. R-2021-3025206

Exhibit to Accompany

the

Direct Testimony

of

Christopher Keller

Bureau of Investigation and Enforcement

Concerning:

Rate of Return

**** COMPANY PROVIDING ADEQUATE, REASONABLE SERVICE ****

I&E

Summary of Cost of Capital

Type of Capital	Ratio	Cost Rate	Weighted Cost
Community Utilities of Pennsylvania Inc. (Water Services)			
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.24%	4.41%
Total	100.00%		7.05%

**** COMPANY PROVIDING INADEQUATE, UNREASONABLE SERVICE ****

I&E

Summary of Cost of Capital

Type of Capital	Ratio	Cost Rate	Weighted Cost
Community Utilities of Pennsylvania Inc. (Water Services)			
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	0.00%	0.00%
Total	100.00%		2.64%

Proxy Group Capital Structure

	2020		2019		2018		2017		2016		Average
American Water Works											
Long-term Debt	$ 9,414.000	59.33%	$ 8,733.000	58.79%	$ 7,576.000	56.37%	$ 6,498.000	54.68%	$ 5,759.000	52.46%	56.33%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	6,454.000	40.67%	6,121.000	41.21%	5,864.000	43.63%	5,385.000	45.32%	5,218.000	47.54%	43.67%
	15,868.000	100.00%	14,854.000	100.00%	13,440.000	100.00%	11,883.000	100.00%	10,977.000	100.00%	100.00%
American States Water Co											
Long-term Debt	584.184	47.66%	492.735	45.03%	376.587	40.28%	321.039	37.73%	320.981	39.37%	42.01%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	641.673	52.34%	601.530	54.97%	558.223	59.72%	529.945	62.27%	494.297	60.63%	57.99%
	1,225.857	100.00%	1,094.265	100.00%	934.810	100.00%	850.984	100.00%	815.278	100.00%	100.00%
California Water Service Group											
Long-term Debt	794.968	46.32%	799.682	50.63%	710.027	49.30%	515.793	42.65%	531.745	44.64%	46.71%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	921.344	53.68%	779.906	49.37%	730.157	50.70%	693.462	57.35%	659.471	55.36%	53.29%
	1,716.312	100.00%	1,579.588	100.00%	1,440.184	100.00%	1,209.255	100.00%	1,191.216	100.00%	100.00%
Middlesex Water Co											
Long-term Debt	278.286	44.41%	236.509	42.05%	152.851	37.83%	139.045	37.51%	134.538	37.85%	39.93%
Preferred Stock	2.084	0.33%	2.084	0.37%	2.433	0.60%	2.433	0.66%	2.436	0.69%	0.53%
Common Equity	346.208	55.25%	323.792	57.57%	248.787	61.57%	229.175	61.83%	218.437	61.46%	59.54%
	626.578	100.00%	562.385	100.00%	404.071	100.00%	370.653	100.00%	355.411	100.00%	100.00%
SJW Group											
Long-term Debt	1,287.580	58.40%	1,283.597	59.05%	431.424	32.67%	431.092	48.20%	433.335	50.68%	49.80%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	917.160	41.60%	889.984	40.95%	889.312	67.33%	463.209	51.80%	421.646	49.32%	50.20%
	2,204.740	100.00%	2,173.581	100.00%	1,320.736	100.00%	894.301	100.00%	854.981	100.00%	100.00%
Essential Utilties											
Long-term Debt	5,563.386	54.29%	2,954.972	43.23%	2,398.464	54.41%	2,007.753	50.63%	1,737.605	48.43%	50.20%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	4,683.877	45.71%	3,880.860	56.77%	2,009.364	45.59%	1,957.621	49.37%	1,850.068	51.57%	49.80%
	10,247.263	100.00%	6,835.832	100.00%	4,407.828	100.00%	3,965.374	100.00%	3,587.673	100.00%	100.00%
York Water Company											
Long-term Debt	123.573	46.31%	94.535	41.33%	93.328	42.51%	90.098	43.01%	84.609	42.59%	43.15%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	143.252	53.69%	134.185	58.67%	126.195	57.49%	119.405	56.99%	114.061	57.41%	56.85%
	266.825	100.00%	228.720	100.00%	219.523	100.00%	209.503	100.00%	198.670	100.00%	100.00%

Five-Year Average Capital Structure	
Long-term Debt	46.88%
Preferred Stock	0.08%
Common Equity	53.05%
	100.00%

Source: Compustat (data in millions)
April 2021

Accessed on June 25, 2021

	2020		
	Interest Charges	**Long-Term Debt**	**Debt Cost**
American Water Works	$ 408.00	$ 9,414.00	4.33%
American States Water Co	22.53	584.18	3.86%
California Water Service Group	45.05	794.97	5.67%
Middlesex Water Co	7.49	278.29	2.69%
SJW Group	58.39	1,287.58	4.53%
Essential Utilties	188.44	5,563.39	3.39%
York Water Company	4.71	123.57	3.81%
	Range:	**Low**	**2.69%**
		High	**5.67%**
		Average	**4.04%**

Source: Compustat
April 2021

Accessed on June 25, 2021

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2019. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2019. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.**

For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A source water assessment of the Towamensing, Walcksville and the Trimmers Rock geologic aquifer, which supplies water for Community Utilities of Pennsylvania, Inc. was completed by the PA Department of Environmental Protection (PADEP).
Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.
Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.
The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2019.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Sample Period	Units	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper						
Jan. – June 2018 Monitoring Period	ppm	0.64	3 of 40 samples	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
July – Dec. 2018 Monitoring Period	ppm	0.77	5 of 40 samples			
Jan — Jun 2019 *Represents sampling outside of compliance period	ppm	0.24-0.899	0 of 2 samples			
*Additional individual samples were collected in 2019 with 0 of 2 samples exceeding the copper AL. *Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.*						
Lead						
Jan. – June 2018 Monitoring Period	ppb	1.76	0 of 40 samples	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits.
July – Dec. 2018 Monitoring Period	ppb	2.42	0 of 40 samples			
Jan — Jun 2019 *Represents partial sampling outside of compliance period	ppb	ND-37	1 of 2 samples			
*Additional individual samples were collected in 2019 with 1 of 2 samples exceeding the lead AL at 37 ppb. *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*						

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Radiological Contaminants							
Combined Radium (pCi/l) (Radium-228)	2015	N	1.09	1.09	0	5	Erosion of natural deposits
Inorganic Contaminants							
Arsenic (ppb)	2019	Y*	4.8	ND - 27.5	0	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2018	N	0.0127	ND - 0.0421	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
*The issue has been resolved. One sample collected for arsenic in 12/2018 showed a level above 10 ppb which did not result in a violation during 2018. After a verification sample was collected in 1/2019 which also resulted in a level above 10 ppb, customers were notified on 2/5/19 of the elevated arsenic results. Measures have been taken to lower the levels and increased monitoring has shown the levels below the MCL. Customers will be notified if the average were to exceed the MCL. Please see the following for EPA's required language: *Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system,*							
Nitrate/Nitrite Contaminants							
Nitrate (as Nitrogen) (ppm)	2019	N	0.18	ND - 0.55	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Water Quality Test Results

Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2019	See Violation Section	1.34	0.46 - 2.09	MRDLG = 4	MRDL = 4	Water additive used to control microbes

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCL	Likely Source of Contamination
*Manganese (ppm)	2018-2019	Y	0.1191	ND - 0.798	0.05	Erosion of natural deposits
Iron (ppm)	2019	N	ND	ND	1.0	Erosion of natural deposits
Chloride (ppm)	2018	N	37	22 - 54	250	Erosion of natural deposits
Sulfate (ppm)	2018	N	16	11 - 23	250	Erosion of natural deposits
**Lead (ppm)	2019	N	ND	ND	0.015	Erosion of natural deposits, leeching from wood preservatives

**Well 8, which is 1 of 7 wells within the water system, exceeded the EPA Lifetime Health Advisory level for Manganese in 2018. Well 8 has been taken offline and an assessment is being done to see if further treatment is needed. Although manganese is an essential nutrient at low doses, chronic exposure to high doses may pose health risks. There is little data for the consumption exposure to manganese and health effects. Manganese is considered a secondary contaminant with a Secondary Maximum Contaminant Level (SMCL). SMCL's are not health-based standards; rather they are set for aesthetic effects. Excess manganese could produce a brownish color in laundered goods, impair the taste of tea, coffee, and other beverages and may cause a dark brown or black stain on porcelain plumbing fixtures.*

***The lead samples was collected in raw water and was not collected as part of the Lead and Copper rule.*

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2018	27.6	23.2 - 35.6
Magnesium	2017	6.29	N/A

PFAS Testing

Community Utilities of Pennsylvania, Inc. is currently conducting statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Notification has or will be sent to all registered customers of the testing results once completed.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Additional Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2019:

Haloacetic Acids (HAA5)

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE (DBP), MAJOR	09/05/2019	09/30/2019 - Result ND (MCL 60 ppb)	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Sample taken 9/30/19.

Total Trihalomethanes (TTHM)

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE (DBP), MAJOR	09/05/2019	10/17/2019 - Result ND (MCL 80ppb)	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Sample taken 10/17/2019.

Groundwater Rule/Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Recordkeeping Requirements Not Met for well 6 entry point 106	02/01/2019	03/14/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 7 entry point 107	03/19/2019	04/04/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 5 entry point 105	04/09/2019	05/02/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 7 entry point 107	04/04/2019	05/01/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	06/28/2019	06/28/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	03/11/2019	3/12/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	03/22/2019	03/23/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	04/06/2019	04/06/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to monitor or report for the disinfectant specified.	3/21/19	3/31/19	PA DEP received the report late. Compliance has been achieved.

Revised Total Coliform Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to properly collect or analyze RTCR routine samples.	9/23/19	10/7/19	PA DEP received the report late. Compliance has been achieved.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Haloacetic Acids (HAA5) and Total Trihalomethanes (TTHM)

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. Haloacetic Acid and Trihalomethane samples were required to be collected on 09/05/2019. We failed to collect them on 09/05/2019 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for Haloacetic Acids and Trihalomethanes and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
HAA5	1/year	1	09/05/2019	09/30/2019
TTHM	1/year	1	09/05/2019	10/17/2019

What happened? What was done?

PA DEP requires that HAA5 and TTHM samples be taken 09/05/2019. Samples were taken late on 09/30/2019 and 10/17/2019, both results were ND.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, MD 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with Annual 2019 CCR

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual.

The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet. For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A source water assessment of the Towamensing, Walcksville and the Trimmers Rock geologic aquifer, which supplies water for Community Utilities of Pennsylvania, Inc. was completed by the PA Department of Environmental Protection (PADEP).

Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Contaminant (Units)	Sample Date	Action Level (AL)	MCLG	90th Percentile Value	# of sites Above AL of Total Sites	Violation	Likely Source of Contamination
Copper (ppm)	2020	1.3	1.3	1.16	3 out of 40	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb)	2020	15	0	3.0	3 out of 40	N	Corrosion of household plumbing systems, erosion of natural deposits.

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.*
Lead*: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

Chemical Contaminants

Contaminant (units)	Sample Date	MCL/MRDL Violation Y/N	Your Water Average	Range Low-High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2020	N	1.89	0.3 - 2.86	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Nitrate (as Nitrogen) (ppm)	2020	N	0.81	ND - 7.32	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Nitrate *in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.*

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCL	Likely Source of Contamination
Sulfate (ppm)	2018	N	16	11 - 23	250	Erosion of natural deposits
**Lead (ppb)	2020	N	10	ND– 48	15	Erosion of natural deposits
**Copper (ppm)	2020	N	0.307	ND-0.578	1.3	Erosion of natural deposits, leeching from wood preservatives

***Lead and Copper samples were collected at Entry Point and was not collected as part of the Lead and Copper rule.*

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Arsenic (ppm)	2020	N	0.002	0.002 - 0.002	0	0.01	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2020	21.43	17.7 - 24.0
Magnesium	2017	6.29	N/A

PFAS Testing

Community Utilities of Pennsylvania, Inc., Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.
For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

PFAS Results (***All results reported as Nanograms per liter (ng/L)***)

Contaminant	Sample Date	Range of Detect	Average	EPA Advisory	Below HAL
PFOS	2020	ND - 2.2	<2.0	70	Yes
PFOA	2020	ND - 2.0	<2.0	70	Yes
Combined PFOS + PFOA	2020	ND - 4.2	2.1	70	Yes

Terms and Abbreviations:

- **PFOS** – Perfluorooctane Sulfonate
- **PFOA** – Perfluorooctanoic Acid
- **Health Advisory Level (HAL)** – To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA established the healthadvisory levels at 70 parts per trillion.
- **Ng/L** – Nanograms per liter(ng/L) which equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.
- **ND (No Detect)** - No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters.

Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2020:

Synthetic Organic Chemicals (SOCs)

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine	10/20/2020	12/29/2020	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Samples were missed in the 3rd quarter. They were taken in the 4th quarter 12/29/2020, the results were non-detect.

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for EP108 Synthetic Organic Compounds (SOCs).

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. SOC samples were required to be collected within the 3rd quarter of 2020. We failed to collect them within the 3rd quarter of 2020 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for SOCs and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
SOC	1 in 2nd Quarter 1 in 3rd Quarter	1 in 2nd Quarter	1 in 2nd Quarter 1 in 3rd Quarter	12/29/2020

What happened? What was done?

PA DEP requires that EP108 SOC samples be taken every 3 years during 2nd and 3rd quarters. Samples were missed in the 3rd quarter. They were taken in the 4th quarter 12/29/2020, the results were non-detect.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, MD 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with Annual 2020 CCR

Community Utilities of Pennsylvania, Inc.
Tamiment Resort Water System

PWS ID: **PA2520070**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2019. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2019. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.**
For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from three wells that draw groundwater from three aquifers in Pike County located within community boundaries in the Lehman Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A Source Water Assessment of our source(s) was completed by the PA Department of Environmental Protection (PA. DEP). The Assessment has found that our source(s) of is/are potentially most susceptible to Low Density Development, Golf Courses, Major Roads, UST sites, Agriculture and Municipal Waste. Overall, our source(s) has/have moderate risk of significant contamination. Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

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Miscellaneous	9	Wastewater Treatment Plant
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Millirems per year (Mrem/year)	A measure of radiation absorbed by the body.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
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Parts per quadrillion (ppq)	One parts per quadrillion, or picograms per liter
Parts per trillion (pptt)	One parts per trillion, or nanograms per liter
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2019.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Lead and Copper

Sample Period	Units	90th Percentile Value	# of Sites Above AL of Total Sites	Action Level (AL)	MCL	Likely Source of Contamination
Copper 6/1/19-9/30/19	ppm	0.171	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead 6/1/19-9/30/19	ppb	0	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Chemical Contaminants

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Trihalomethanes (ppb)	80	80	7.4	1.1-7.4	9/5/19	N	By-product of drinking water chlorination
Nitrate (mg/l)	10.0	10.0	0.317	0.315-0.320	10/3/19	N	Run-off from fertilizer use, leaching septic tanks and sewage
Chlorine (mg/l)	4	4	1.43	0.66-3.15	2019	See Violation Section	Water additive used to control microbes
Radium 226 (pCil)	5	5	0	0–0.02	4/16/15	N	Erosion of natural deposits
Radium 228 (pCil)	5	5	0	0-0.48	4/16/15	N	Erosion of natural deposits

Microbial

Contaminants	TT	MCLG	Assessments/ Corrective Actions	Highest # or % of Positive Samples	Violation Y/N	Sources of Contamination
Total Coliform Bacteria	Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement	N/A	None required	1	N	Naturally present in the environment.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.

PFAS Testing

Community Utilities of Pennsylvania, Inc. is currently conducting statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Notification has or will be sent to all registered customers of the testing results once completed.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2019:

Groundwater Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Recordkeeping Requirements Not Met for well 1 & 3 entry point 101 & 103	08/01/2019	08/14/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for distribution sampling	08/05/2019	09/022019	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for distribution sampling	04/09/2020	04/23/20209	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for well 1 & 3 entry point 101 & 103	3/10/2020	3/11/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MAINTAIN RECORDS

ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA DE BEBER. TRADUZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

Recordkeeping Requirements Not Met for Well 1 and Well 3 entry point chlorine residuals.

We violated a drinking water requirement.

We failed to retain written records about our recycled flows in accordance with the Filter Backwash Recycling Rule.

We failed to notify the Department that we are recycling our waste stream.

X We incurred a record keeping violation under the Safe Drinking Water Act.

What should I do?

There is nothing you need to do at this time. You may continue to drink the water. If a situation arised where the water is no longer safe to drink, you will be notified within 24 hours.

What happened? What was done?

Community Utilities of Pennsylvania acquired the Pennsylvania Utilities Company water system on 8/14/19. The well 1 and 3 entry point chlorine residual records taken by Pennsylvania Utilities Company for 8/1/19-8/13/19 could not be found. When Community Utilities of Pennsylvania acquired the system on 8/14/19, operations started monitoring chlorine and maintaining records.

For more information, please contact Emily Long - P.O. Box 379, Dunkirk, MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania.

PWS ID#: 2520070
Date distributed: Direct Mail with Annual 2019 CCR

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Distribution Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd, 3rd, 4th, and 5th weeks of August we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of August	2/week	2/week

What happened? What was done?

Community Utilities of Pennsylvania acquired the Pennsylvania Utilities Company water system on 8/14/19. DEP's Drinking Water Reporting System states that 2 distribution chlorine samples are required per month. On 9/10/19 DEP informed Community Utilities of Pennsylvania that 2 distribution chlorine samples are required per week. Starting September 2019, Community Utilities of Pennsylvania will ensure 2 distribution chlorine samples are monitored per week.

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Monitoring Requirements Not Met for Distribution and Entry Point Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd and 3rd weeks of March we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time. On 3/10/2020 we did not monitor entry point chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

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Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of March, 2 during the 4th week of March	2/week	2/week
Entry Point Chlorine	2/day	2/day every day in March except 3/10/2020	2/day	2/day

What happened? What was done?

The water operator failed to collect distribution samples the 2nd and 3rd weeks of March. The water operator also failed to collect entry point samples March 10th. This water operator is no longer employed by the company.

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Community Utilities of Pennsylvania, Inc.
Tamiment Resort Water System

PWS ID: **PA2520070**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.
Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual. The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet.
For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from three wells that draw groundwater from three aquifers in Pike County located within community boundaries in the Lehman Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A Source Water Assessment of our source(s) was completed by the PA Department of Environmental Protection (PA. DEP). The Assessment has found that our source(s) of is/are potentially most susceptible to Low Density Development, Golf Courses, Major Roads, UST sites, Agriculture and Municipal Waste. Overall, our source(s) has/have moderate risk of significant contamination. Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754 -0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

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Parts per trillion (pptt)	One parts per trillion, or nanograms per liter
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Inorganic Chemicals

Contaminant (Units)	Sample Date	Action Level (AL)	MCLG	90th Percentile Value	# of sites Above AL of Total Sites	Violation	Likely Source of Contamination
Copper (ppm)	2019	1.3	1.3	0.171	0	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb)	2019	15	0	0	0	N	Corrosion of household plumbing systems, erosion of natural deposits.

Radiological Contaminants

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Radium 226 (pCil)	5	5	0	0–0.02	4/16/15	N	Erosion of natural deposits
Radium 228 (pCil)	5	5	0	0-0.48	4/16/15	N	Erosion of natural deposits

Disinfectant / Disinfection By-Products

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Trihalomethanes (ppb)	80	80	1.1	1.1 - 1.1	09/2020	N	By-product of drinking water chlorination
Chlorine (mg/l)	4	4	1.15	0.40 - 1.72	2020	See Violation Section	Water additive used to control microbes

PFAS Testing

Community Utilities of Pennsylvania, Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) were tested during 2020 with no detection. No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters. Nanograms per liter (ng/L) equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2020:

Groundwater Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring Requirements Not Met for well 1 & 3 entry point 101 & 103	3/10/2020	3/11/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

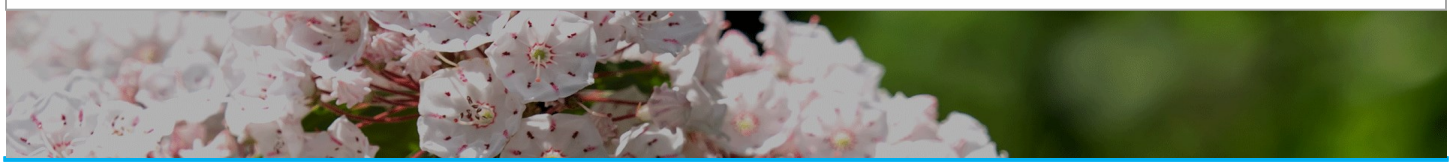
Revised Total Coliform Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to Properly Collect or Analyze RTCR Routine Samples	04/09/2020	04/23/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Reporting, Routine	6/10/2020	7/15/2020	We failed to report 2 distribution sample results to the PADEP by the required reporting date. Results were submitted on 7/15/2020.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/



IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Distribution and Entry Point Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd and 3rd weeks of March we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time. On 3/10/2020 we did not monitor entry point chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and entry point chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of March, 2 during the 4th week of March	2/week	2/week
Entry Point Chlorine	2/day	2/day every day in March except 3/10/2020	2/day	2/day

What happened? What was done?

The water operator failed to collect distribution samples the 2nd and 3rd weeks of March. The water operator also failed to collect entry point samples March 10th. This water operator is no longer employed by the company.

For more information, please contact Emily Long – PO Box 379, Dunkirk MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you Community Utilities of Pennsylvania.

PWS ID#: 2520070 Date distributed: Direct Mail with Annual 2019 CCR

Dividend Yields of Seven Company Proxy Group

Company	American Water Works	American States Water Co	California Water Service Group	Middlesex Water Co	SJW Group	Essential Utilties	York Water Company
Symbol	*AWK*	*AWR*	*CWT*	*MSEX*	*SJW*	*WTRG*	*YORW*
Div	2.55	1.52	0.98	1.15	1.44	1.10	0.83
52-wk low	121.84	69.25	41.19	59.61	56.84	38.28	40.57
52-wk high	172.56	83.75	61.98	88.61	71.69	49.36	52.97
Spot Price	154.76	80.08	55.98	83.16	64.74	46.15	46.25
Spot Div Yield	1.65%	1.90%	1.75%	1.38%	2.22%	2.38%	1.79%
52-wk Div Yield	1.73%	1.99%	1.90%	1.55%	2.24%	2.51%	1.77%
Average	**1.69%**	**1.94%**	**1.83%**	**1.47%**	**2.23%**	**2.45%**	**1.78%**

	Average
Spot Div Yield	**1.87%**
52-wk Div Yield	**1.96%**
Average	**1.91%**

Source: Barrons June 25, 2021
Value Line April 9, 2021

Five-Year Growth Estimate Forecast for Proxy Group (Actual)

Company	Symbol	Yahoo	Zacks	Morningstar	Value Line	Average
		Source				
American Water Works	AWK	8.60%	8.10%	9.40%	8.50%	8.65%
American States Water Co	AWR	5.20%	NMF	5.20%	6.50%	5.63%
California Water Service Group	CWT	11.70%	NMF	11.50%	6.50%	9.90%
Middlesex Water Co	MSEX	2.70%	NMF	NMF	4.50%	3.60%
SJW Group	SJW	7.00%	NMF	47.10%	13.00%	22.37%
Essential Utilties	WTRG	6.40%	6.20%	8.60%	10.00%	7.80%
York Water Company	YORW	4.90%	NMF	NMF	6.50%	5.70%
Average						**9.09%**

Sources date:
(From Internet)
June 25, 2021

Five-Year Growth Estimate Forecast for Proxy Group (Adjusted)

Company	Symbol	Yahoo	Zacks	Morningstar	Value Line	Average
		Source				
American Water Works	AWK	8.60%	8.10%	9.40%	8.50%	8.65%
American States Water Co	AWR	5.20%	NMF	5.20%	6.50%	5.63%
California Water Service Group	CWT	11.70%	NMF	11.50%	6.50%	9.90%
Middlesex Water Co	MSEX	2.70%	NMF	NMF	4.50%	3.60%
SJW Group	SJW	7.00%	NMF	X	13.00%	10.00%
Essential Utilties	WTRG	6.40%	6.20%	8.60%	10.00%	7.80%
York Water Company	YORW	4.90%	NMF	NMF	6.50%	5.70%
Average						**7.33%**

Expected Market Cost Rate of Equity

Using Data for the Proxy Group of Seven Water Companies

5-Year Forecasted Growth Rates

	Time Period	Adjusted Dividend Yield	Growth Rate	Expected Return on Equity
		(1)	(2)	(3=1+2)
(1)	**52-Week Average** **Ending:** June 25, 2021	1.96%	7.33%	9.28%
(2)	**Spot Price** **Ending:** June 25, 2021	1.87%	7.33%	9.20%
(3)	**Average:**	**1.91%**	**7.33%**	**9.24%**

Sources: Value Line April 9, 2021
Barrons June 25, 2021

Company	Beta
American Water Works	0.85
American States Water Co	0.65
California Water Service Group	0.65
Middlesex Water Co	0.70
SJW Group	0.85
Essential Utilties	0.95
York Water Company	0.80
Average beta for CAPM	**0.78**

Source:
Value Line
April 9, 2021

Risk-Free Rate

Treasury note 10-yr Note	**Yield**
3Q 2021	1.80
4Q 2021	1.90
1Q 2022	2.00
2Q 2022	2.00
3Q 2022	2.10
2023-2027	2.90
Average	**2.12**

Source:
Blue Chip
June 1, 2021

Required Rate of Return on Market as a Whole Forecasted

	Dividend Yield	+	Growth Rate	=	Expected Market Return
Value Line Estimate	1.70%		6.78%	(a)	8.48%
S&P 500	1.47%	(b)	13.40%		14.87%
Average Expected Market Return				=	**11.68%**

(a) ((1+30%)^.25) -1) Value Line forecast for the 3 to 5 year index appreciation is 30%
(b) S&P 500 dividend yield multiplied by half the S&P 500 growth rate

S&P 500 Dividend Yield: 1.38%

Sources:

Value Line	6/25/2021
S&P 500 Dividend Yield (Barrons)	6/18/2021
S&P 500 Growth Rate (Morningstar)	6/25/2021

CAPM with Forecasted Return

Re	Required return on individual equity security
Rf	Risk-free rate
Rm	Required return on the market as a whole
Be	Beta on individual equity security

Re = Rf+Be(Rm-Rf)

Rf =	2.12
Rm =	11.68
Be =	0.78
Re =	**9.56**

Sources: Value Line April 9, 2021
Blue Chip June 1, 2021

I&E Statement No. 1
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WATER DIVISION

Docket No. R-2021-3025206

Direct Testimony

of

Zachari Walker

Bureau of Investigation and Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES
CASH WORKING CAPITAL

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Zachari Walker, and my business address is Pennsylvania Public Utility Commission, 400 North Street, Harrisburg, PA 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND?

A. My education and employment background is attached as Appendix A.

Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.

A. I&E is responsible for representing the public interest in rate and other proceedings before the Commission. I&E's analysis in this proceeding is based on its responsibility to represent the public interest. This responsibility requires balancing the interests of ratepayers, the regulated utility, and the regulated community as a whole.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my direct testimony is to review the base rate filing of Community Utilities of Pennsylvania Inc. – Water Division (CUPA W or Company) and recommend adjustments to the Company's proposed operating and maintenance

(O&M) expenses and cash working capital claims for the fully projected future test year (FPFTY) ending December 31, 2022.

Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?

A. Yes. I&E Exhibit No. 1 contains schedules that support my direct testimony.

Q. PLEASE SUMMARIZE THE COMPANY'S REQUESTED REVENUE INCREASE.

A. The Company's base rate case was filed on April 12, 2021,[1] with a requested increase of $757,517 to claimed present rate revenues of $2,069,441 resulting in a total overall revenue requirement of $2,826,958 for the FPFTY.[2]

Q. PLEASE SUMMARIZE YOUR ADJUSTMENTS.

A. The following table summarizes my recommended adjustments:

	Company Claim	I&E Recommended Allowance	I&E Adjustment
O&M Expenses:			
Employee Pensions and Benefits	$111,990	$79,414	($32,576)
Purchased Power Expense	$106,110	$75,282	($30,828)
Chemical Expense	$113,899	$74,166	($39,733)
Materials, Supplies, and Other Maintenance Expense	$116,943	$98,751	($18,192)
Rate Case Expense	$36,709	$29,578	($7,131)
Total O&M Adjustments			**($128,460)**
Rate Base Adjustments:			
Deferred Rate Case Expense	$118,312	$0	($118,312)
Cash Working Capital	$200,448	$180,547	($19,901)
Total Rate Base Adjustments			**($138,213)**

[1] CUPA W filing, Section 1, p. 1.
[2] Errata to Supplement No. 9 to Tariff Water – Pa PUC No. 1 Etc. – CUPA, Section 1, p. 11.

I&E OVERALL RECOMMENDED REVENUE REQUIREMENT

Q. WHAT IS I&E'S TOTAL RECOMMENDED REVENUE REQUIREMENT?

A. I&E's total recommended revenue requirement is $2,020,738. This recommended revenue requirement represents a decrease of $48,703 to the Company's claimed present rate revenues of $2,069,441. This total recommended allowance incorporates my adjustments made in this testimony to O&M expenses, taxes, and rate base, and those recommended adjustments made in the testimony of I&E witnesses Christopher Keller (I&E Statement No. 2) and Esyan Sakaya (I&E Statement No. 3). This represents I&E's primary recommendation, which includes its recommendation that the Company earn 0% return on equity because it is not providing adequate and reasonable water service as discussed by I&E witness Christopher Keller.

A calculation of the I&E's primary recommended revenue requirement is shown below:

Community Utilities of PA Inc. - Water		TABLE I			
R-2021-3025206		INCOME	SUMMARY		
	12/31/22	INVESTIGATION & ENFORCEMENT			
	Proforma	[----------			----------]
	Present Rates	Adjustments	Present Rates	Allowances	Proposed
	$	$	$	$	$
Operating Revenue	2,069,441	0	2,069,441	-48,703	2,020,738
Deductions:					
O&M Expenses	1,561,626	-159,210	1,402,416	-356	1,402,060
Depreciation	308,972	0	308,972		308,972
Taxes, Other	74,304	0	74,304	-321	73,983
Income Taxes:					
Current State	-11,581	16,376	4,795	-4,798	-3
Current Federal	-21,913	30,988	9,075	-9,078	-3
Deferred Taxes	0	0	0		0
ITC	0	0	0		0
Total Deductions	1,911,408	-111,846	1,799,562	-14,553	1,785,009
Income Available	158,033	111,846	269,879	-34,150	235,729
Rate Base	9,093,155	-164,022	8,929,133	0	8,929,133
Rate of Return	1.74%		3.02%		2.64%

Q. IF THE COMMISSION DOES NOT ACCEPT I&E'S PRIMARY POSITION, WHAT IS I&E'S ALTERNATIVE RECOMMENDED REVENUE REQUIREMENT?

A. If the Commission does not accept I&E's recommended 0% equity recommendation, I&E's total recommended revenue requirement for the Company is $2,582,778, which is an increase of $513,337 to the Company's present rate revenues of $2,069,441. This total recommended allowance incorporates my adjustments made in this testimony to O&M expenses, taxes, and rate base, and those recommended adjustments made in the testimony of I&E witnesses Christopher Keller (I&E Statement No. 2) and Esyan Sakaya (I&E Statement No. 3).

A calculation of the I&E alternative recommended revenue requirement is shown below:

Community Utilities of PA Inc. - Water		TABLE I			
R-2021-3025206		INCOME	SUMMARY		
	12/31/22	INVESTIGATION & ENFORCEMENT			
	Proforma	[----------			----------]
	Present Rates	Adjustments	Present Rates	Allowances	Proposed
	$	$	$	$	$
Operating Revenue	2,069,441	0	2,069,441	513,337	2,582,778
Deductions:					
O&M Expenses	1,561,626	-159,210	1,402,416	3,747	1,406,163
Depreciation	308,972	0	308,972		308,972
Taxes, Other	74,304	0	74,304	3,388	77,692
Income Taxes:					
Current State	-11,581	16,362	4,781	50,570	55,351
Current Federal	-21,913	30,962	9,049	95,683	104,732
Deferred Taxes	0	0	0		0
ITC	0	0	0		0
Total Deductions	1,911,408	-111,886	1,799,522	153,388	1,952,910
Income Available	158,033	111,886	269,919	359,949	629,868
Rate Base	9,093,155	-158,859	8,934,296	0	8,934,296
Rate of Return	1.74%		3.02%		7.05%

1 **EMPLOYEE PENSIONS AND BENEFITS**

2 **Q. WHAT IS INCLUDED IN THE COMPANY'S EMPLOYEE PENSIONS**
3 **AND BENEFITS CLAIM?**

4 A. The Company's claim for employee pensions and benefits includes a 45.79%
5 allocation of the total allocated payroll and benefits expense, $244,588.[3] The
6 allocated expense includes a 13.90% "Leadership" Equivalent Residential
7 Connection (ERC) allocation, a 9.83% "North" ERC allocation, and a 37.78%
8 "Mid-Atlantic" ERC allocation.[4]

9

10 **Q. WHAT IS THE COMPANY'S EMPLOYEE PENSIONS AND BENEFITS**
11 **CLAIM?**

12 A. The Company's employee pensions and benefits claim is $111,990.[5]

13

14 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

15 A. The Company states its forecasted pension and benefits costs are based on review
16 and analysis of current and projected headcounts and corresponding benefits, the
17 cost increase is driven by the level of health insurance claims, and health insurance
18 costs are projected to increase 5%-8% annually.[6] The Company also states
19 employee benefits fluctuate as salary expenses and headcount changes.[7]

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[3] CUPA W Statement No. 2, Exhibit WP-PB-03, p. 2.
[4] CUPA W Statement No. 2, Exhibit WP-PB-03, p. 2.
[5] CUPA W filing, Section 1, p. 12.
[6] CUPA W Statement No. 2, p. 14.
[7] I&E Exhibit No. 1, Schedule 1.

Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?

A. No.

Q. WHAT DO YOU RECOMMEND FOR EMPLOYEE PENSIONS AND BENEFITS?

A. I recommend an allowance of $79,414 or a reduction of $32,576 ($111,990 - $79,414) to the Company's claim.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on the Company's response to I&E-RE-8-D and the historical decline of employee pensions and benefits expense as a percentage of the Company's salaries and wages expense over the last three years.[8] Using the figures contained in the response to I&E-RE-3-D,[9] I have determined that employee pensions and benefits as a percentage of salaries and wages has been trending downward (27% in 2018, 22% in 2019, and 20% in 2020), and my recommended allowance of $79,414 ($396,201 x 20%); is calculated as 20% of the Company's fully projected future test year (FPFTY) proposed salaries and wages expense; $396,201.[10] This is based on the 20% historic test year (HTY) 2020 percentage of employee pensions and benefits of total salaries and wages.

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[8] I&E Exhibit No. 1, Schedules 1 and 2.
[9] I&E Exhibit No. 1, Schedule 3, pp. 1-2.
[10] CUPA W Statement No. 3, Exhibit DMC-1, Section 1, p. 12.

Q. WHY DID YOU NOT RECOMMEND A HISTORIC AVERAGE OF THE PERCENTAGES?

A. Using a historic average would not be appropriate since benefits as a percentage of total salaries has been trending downward over the most recent three historic years. In this instance, the most recent (2020) percentage, which produces an allowance of $79,414, is most appropriate as it is in line with the fluctuating 2018, 2019, and 2020 historic actual amounts of $74,116,[11] $80,798,[12] and $76,463.[13]

PURCHASED POWER EXPENSE

Q. WHAT IS THE COMPANY'S CLAIM FOR PURCHASED POWER EXPENSE?

A. The Company's claim for purchased power expense is $106,110.[14]

Q. WHAT IS THE COMPANY'S BASIS FOR ITS CLAIM?

A. The Company's claim for purchased power expense is based on the latest seven years of vendor invoicing for the service periods June 1, 2013, through May 30, 2020.[15]

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[11] I&E Exhibit No. 1, Schedule 3, p. 2.
[12] I&E Exhibit No. 1, Schedule 3, p. 2.
[13] I&E Exhibit No. 1, Schedule 2 and CUPA W Statement No. 3, Exhibit DMC-1, Section 1, p. 12.
[14] CUPA W Statement No. 3, p. 8.
[15] CUPA W Statement No. 3, p. 8.

Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?

A. No.

Q. WHAT DO YOU RECOMMEND FOR PURCHASED POWER EXPENSE?

A. I recommend an allowance of $75,282 or a reduction of $30,828 ($106,110 - $75,282) to the Company's claim. It should be noted that this recommended allowance does not reflect an adjustment being proposed by I&E witness Esyan Sakaya in I&E Statement No. 3.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on the historical three-year average purchased power expense per current Water Division ERC,[16] utilizing the Company's provided data and explanations.

The Company supplied the file "I&E-RE-1 10-B (Purchased Power)" and tab "Summary W" in response to I&E-RE-10-D, when requested to provide an explanation with documentation to support the increase in purchased power expense from the year ending December 31, 2019, to the HTY.[17] The tab "Summary W" displays the 2020 annual total in the amount of $38,450,[18] which differs from the amount reported in direct testimony, $120,160.[19] When compared

[16] I&E Exhibit No. 1, Schedule 4.
[17] I&E Exhibit No. 1, Schedule 5, pp. 1-3.
[18] I&E Exhibit No. 1, Schedule 5, p. 3.
[19] CUPA W Statement No. 3, Exhibit DMC-1, Section 1, p. 12.

to reported values for 2018 and 2019, the Company's projected net reduction of purchased power expense between the HTY and the FPFTY is a forecast to set a new normal level for this expense.[20]

In response to I&E-RE-36,[21] the Company states when customer usage increases, more purchased power is required at the treatment plants.[22] According to CUPA Supplement No. 5 to Tariff Water – Pa. PUC No. 1 at Docket No. R-2019-3008947, Equivalent Residential Customers is a ratio assigned to a customer or class of customers based on meter sizes and an average number of gallons per day. The actual number of connections is then multiplied by the ERC to determine a total number of ERCs per subdivision or company.[23] In summary, an increase in ERC would equate to an increase in customer usage, and thus, an increase in purchased power expense.

My recommendation to average the historic costs smooths the historic years' expense fluctuation, while recognizing factors that affect purchased power expense. These factors include the 2019 acquisition of Tamiment Water Company and the Company's forecasted decrease of FPFTY purchased power expense due to contracting a new power supplier, Integrity Energy.[24]

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[20] I&E Exhibit No. 1, Schedule 4.
[21] I&E Exhibit No. 1, Schedule 6.
[22] I&E Exhibit No. 1, Schedule 6.
[23] I&E Exhibit No. 1, Schedule 7.
[24] CUPA W Statement No. 3, p. 8.

Q. HOW DID YOU CALCULATE YOUR RECOMMENDATION?

A. In response to I&E-RE-3-D,[25] the Company provided the 2018 and 2019 purchase power expense totals. These historical annual totals, $38,854 and $35,475, respectively, were then divided by the corresponding water division ERC (2,713 and 3,226).[26] The same calculation was performed for the HTY purchased power expense ($120,160), provided in the Company's filing, and corresponding ERC (3,291).[27] The resulting historical expense per ERC values were then averaged (($14.32 + $11.00 + $36.51) ÷ 3) and multiplied by the current ERC count yielding an amount of $67,827 ($20.61 x 3,291).

Finally, my recommended allowance is being increased by the adjustment proposed by I&E witness Esyan Sakaya ($7,455)[28] to this same account to avoid any duplication of I&E adjustments, which produces a recommended allowance of $75,282 ($67,827 + $7,455).

Q. IF THE COMMISSION DECIDES TO REJECT MR. SAKAYA'S RECOMMENDED REDUCTION TO PURCHASED POWER, HOW WILL YOUR ADJUSTMENT BE IMPACTED?

A. If the Commission rejects Mr. Sakaya's $7,455 adjustment to reduce the cost of purchased power for excess unaccounted for water, my recommended adjustment should be increased to $38,283 ($30,828 + $7,455).[29]

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[25] I&E Exhibit No. 1, Schedule 3, pp. 1-2.
[26] I&E Exhibit No. 1, Schedule 4.
[27] CUPA W Statement No. 3, Exhibit WP-DC-01.
[28] I&E Statement No. 3.
[29] I&E Exhibit No. 1, Schedule 4.

1 **CHEMICAL EXPENSE**

2 **Q. WHAT IS THE COMPANY'S CLAIM FOR CHEMICAL EXPENSE?**

3 A. The Company's claim for chemical expense is $113,899.[30]

4

5 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

6 A. The Company states monthly forecasts for chemicals are based on anticipated
7 demand of each chemical. The forecast is based on analysis completed by
8 operations, which includes estimated costs per unit, by chemical type. The
9 estimated chemical costs are determined by review of current costs. An estimated
10 number of units, which is based on historical seasonal needs, of each chemical
11 type is then used as a multiplier to determine forecasted chemical expense for each
12 system.[31]

13

14 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

15 A. No.

16

17 **Q. WHAT IS YOUR RECOMMENDATION FOR CHEMICAL EXPENSE?**

18 A. I recommend an allowance of $74,166 or a reduction of $39,733 ($113,899 -
19 $74,166) to the Company's claim. It should be noted that this recommended

[30] CUPA W filing, Section 1, p. 12.
[31] CUPA W Statement No. 3, p. 11.

allowance does not reflect an adjustment being proposed by I&E witness Esyan Sakaya in I&E Statement No. 3.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on a historic three-year average expense per current ERC.[32] In response to I&E-RE-3-D, the Company provided total chemical expenses for 2018 and 2019.[33] In response to I&E-RE-36, the Company states when usage increases, more purchased power is required at the treatment plants.[34] This would indicate customer usage affects chemical usage. Therefore, it is reasonable to surmise customer usage drives fluctuations of chemical expense disregarding any speculative inventory stockpiling.

According to CUPA Supplement No. 5 to Tariff Water – Pa. PUC No. 1 at Docket No. R-2019-3008947, Equivalent Residential Customers is a ratio assigned to a customer or class of customers based on meter sizes and an average number of gallons per day. The actual number of connections is then multiplied by the ERC to determine a total number of ERCs per subdivision or company.[35] In summary, an increase in ERC would equate to an increase in customer usage and thus, an increase in chemical expense.

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[32] I&E Exhibit No. 1, Schedule 8.
[33] I&E Exhibit No. 1, Schedule 3, pp. 1-2.
[34] I&E Exhibit No. 1, Schedule 6.
[35] I&E Exhibit No. 1, Schedule 7.

My recommendation to average the historic costs smooths the historic years' expense fluctuation, while recognizing factors that affect chemical expense.

Q. HOW DID YOU CALCULATE YOUR RECOMMENDATION?

A. In response to I&E-RE-3-D,[36] the Company provided the 2018 and 2019 chemical expense totals. These historical annual totals, $42,507 and $60,603 respectively, were then divided by the corresponding water division ERC (2,713 and 3,226 respectively).[37] The same calculation was performed for the HTY chemical expense ($85,106), provided in the Company's filing, and corresponding ERC (3,291).[38] The resulting expense per ERC values were then averaged (($15.67 + $18.79 + $25.86) ÷ 3) and multiplied by the current ERC count yielding a recommended allowance of $66,164 ($20.10 x 3,291).

Finally, my recommended allowance is being increased by the adjustment proposed by I&E witness Esyan Sakaya ($8,002)[39] to this same account to avoid any duplication of I&E adjustments, which produces a recommended allowance of $74,166 ($66,164 + $8,002).

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36 I&E Exhibit No. 1, Schedule 3, pp. 1-2.
37 I&E Exhibit No. 1, Schedule 8.
38 CUPA W Statement No. 3, Exhibit WP-DC-01.
39 I&E Statement No. 3.

Q. IF THE COMMISSION DECIDES TO REJECT MR. SAKAYA'S RECOMMENDED REDUCTION TO CHEMICAL EXPENSE, HOW WILL YOUR ADJUSTMENT BE IMPACTED?

A. If the Commission rejects Mr. Sakaya's $8,002 adjustment to reduce the cost of chemical expense for excess unaccounted for water, my recommended adjustment should be increased to $47,735 ($39,733 + $8,002).[40]

<u>MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE</u>

Q. WHAT IS THE COMPANY'S CLAIM FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE?

A. The Company's claim for materials, supplies, and other maintenance expense is $116,943.[41]

Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?

A. The Company states these expenses are based on a three-year historical average expense analysis. Materials, supplies, and other maintenance expense is broken down into the following categories: deferred maintenance ($18,192 in the FPFTY), uniforms ($2,743 in the FPFTY), weather/hurricane/fuel expense ($1,967 in the FPFTY), and other ($94,042 in the FPFTY).[42]

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[40] I&E Exhibit No. 1, Schedule 8.
[41] CUPA W Exhibit DMC-1, Section 1, p. 12.
[42] CUPA W Statement No. 3, pp. 9-10.

Q. DO YOU AGREE WITH THE COMPANY'S CLAIM FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE?

A. No.

Q. WHAT DO YOU RECOMMEND?

A. I recommend an allowance of $98,751 or a reduction of $18,192 ($116,943 - $98,751) to the Company's claim.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. I recommend disallowance of the $18,192 FPFTY deferred maintenance expense. Routine operating expenses are not appropriately subjected to deferral treatment, representing an out of period expense. Therefore, the Company should not be granted permission to recover prior period routine operating expenses.

<u>RATE CASE EXPENSE</u>

Q. DESCRIBE THE NATURE AND TYPES OF EXPENDITURES TYPICALLY ALLOWED AS PART OF A REGULATED UTILITY'S OVERALL RATE CASE EXPENSE.

A. The nature and types of individual expenditures that comprise a utility's allowable claim for rate case expense are those directly incurred to compile, present, and defend a utility's request for a rate base increase before the Commission. The actual expenditures and estimated costs typically found in an allowable rate case

1 expense claim include legal fees for outside counsel, fees to outside consultants,
2 and the cost of printing, document assembly, and postage. Note that the Company
3 refers to its rate case expense as regulatory commission expense in direct
4 testimony.[43]
5
6 **Q. IN TWO AREAS, THE COMPANY REFERENCES ITS CLAIM AS AN**
7 **AMORTIZED COST.[44] BRIEFLY DISCUSS THE CONCEPT OF**
8 **AMORTIZATION.**
9 A. Amortization is an accounting procedure that writes off a non-recurring or
10 infrequently recurring expense over a reasonable period of years by expensing a
11 pro rata share based on the selected amortization period. Although a claim for an
12 unrecovered *normalized* expense would be disallowed if requested in a subsequent
13 base rate case, an amortized expense allowance could be claimed in a succeeding
14 rate case if there is a remaining unamortized balance.
15
16 **Q. IS THE COMPANY'S PROPOSED AMORTIZATION TREATMENT**
17 **PROPER?**
18 A. No. The Company's rate case expense claim should be normalized rather than
19 amortized.

[43] CUPA W Statement No. 3, p. 14.
[44] CUPA W Statement No 3, pp. 14, 20.

1 **Q. WHAT IS NORMALIZATION?**

2 A. Normalization is a ratemaking concept that describes the transformation of an
3 operating expense that recurs at irregular intervals into a "normal" annual test year
4 allowance. Normalization specifically addresses the prospective recovery of an
5 ongoing expense that recurs sporadically. Normalized expenses are no different
6 than other O&M expenses in that the Company is given the opportunity to achieve
7 full recovery.

8

9 **Q. HOW HAS THE COMMISSION TRADITIONALLY TREATED RATE**
10 **CASE EXPENSE FOR RATEMAKING PURPOSES?**

11 A. The Commission has historically stated that it considers prudently incurred rate
12 case expense as an ongoing expense, occurring at irregular intervals, related to the
13 rendering of utility service. Thus, it is necessary to normalize rate case expense
14 for ratemaking purposes.

15

16 **Q. WHAT IS THE COMPANY'S CLAIM FOR RATE CASE EXPENSE?**

17 A. CUPA W is claiming rate case expense in two separate areas of its filing. The
18 Company is proposing an O&M claim for rate case expense of $36,709[45] and is
19 requesting rate base treatment for the total "deferred rate case cost" of $118,312.[46]

[45] CUPA W Exhibit DMC-1, Section 1, p. 12.
[46] CUPA W Statement No. 3, p. 20.

Q. WHAT IS THE BASIS FOR THE EXPENSE PORTION OF THE COMPANY'S CLAIM?

A. The Company states this claim is based on current and planned rate case costs. Additionally, the Company states that regulatory commission expense is forecasted to increase in the FPFTY, and this increase is driven by the projected expense to be incurred for the current case.[47] The Company is including the unamortized rate case expense amount of $28,525 ($62,299 × 45.79%) in its Water Division expense claim.

Q. WHAT IS THE BASIS FOR THE COMPANY PROPOSED RATE BASE TREATMENT OF "UNAMORTIZED COSTS?"

A. The Company has claimed deferred rate case expense in rate base because the deferred charges are incurred solely for the benefit of the ratepayers. The Company opines that earning a return "on" and "of" the deferred asset is necessary to help offset the negative net present value and this allows the Company to easily attract capital necessary to continue providing an adequate level of service.[48]

Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?

A. No.

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[47] CUPA W Statement No. 3, p. 14.
[48] CUPA W Statement No. 3, p. 20.

Q. WHAT IS YOUR RECOMMENDATION FOR RATE CASE EXPENSE?

A. I recommend an allowance of $29,578 for rate case expense (O&M) or a reduction of $7,131 ($36,709 - $29,578) to the Company's claim. Additionally, I recommend that the deferred amount in rate base of $118,312 be disallowed in its entirety.

Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?

A. I recommend that the Company normalize its rate case expense as opposed to amortizing it, since the Commission recognizes rate case expense as an ongoing expense, occurring at irregular intervals, related to the rendering of utility service. As such, rate case expense is subject to normalization for ratemaking purposes and expensing amounts for prior proceedings should not be allowed. It is also my recommendation that the unamortized rate case expense ($28,525) (as included in the O&M portion of the claim) be disallowed since this is not consistent with normalization treatment. The removal of the unamortized rate case results in a total rate case expense of $118,312 normalized over four years, yielding an annual rate case expense allowance of $29,578. My recommendation decreases rate case expense by $7,131 ($36,709 - $29,578) annually.[49] In addition, and to keep the Company's allowance consistent with normalization treatment, I recommend the $118,312 deferred rate case expense be disallowed for rate base treatment.

[49] I&E Exhibit No. 1, Schedule 9.

Q. PLEASE EXPLAIN IN FURTHER DETAIL WHY YOU RECOMMEND DISALLOWANCE OF THE DEFERRED RATE CASE AMOUNT OF $118,312.

A. My recommended disallowance for rate base treatment of the deferred cost of $118,312 is directly supported by my recommendation to normalize, and not amortize, rate case expense. Items included in rate base increase the value of the Company or its assets such as investment in a new water plant or facility, while items included in O&M are expenses that need to be paid by the Company to operate, such as material expense, chemical expense, tank inspections expense, and rate case expense. As described above, normalization is the process used to fund operations that occur intermittently on a "prospective" basis. The Company would have received an allowance in base rates in its prior rate cases to fund those future occurrences of events, occurring at irregular intervals, such as rate case filings, certain maintenance operations, permit renewals, etc.

Q. ARE THERE ANY OTHER POINTS TO NOTE CONCERNING THE COMPANY'S RATE BASE CLAIM FOR THE DEFERRED RATE CASE EXPENSE OF $118,312?

A. Yes. The $118,312 amount represents the Company's total current rate case expense claim. It should be noted that the Company is claiming a portion of that total (one-fourth) as an expense amount in the instant proceeding. Therefore, in the off chance that the Commission would decide to allow rate base treatment for

1 an unamortized rate case expense balance, the total would need to be reduced by
2 the expense amount allowed in this proceeding. However, as noted above, I
3 recommend disallowance of rate base treatment for this routine operating expense
4 as it does not align with normalization treatment.
5
6 **CASH WORKING CAPITAL**
7 **Q. WHAT IS A CASH WORKING CAPITAL ALLOWANCE FOR**
8 **RATEMAKING PURPOSES?**
9 A. Cash working capital (CWC) can be defined as the amount of liquidity needed to
10 meet short-term obligations and should be sufficient to cover daily operations
11 expense payments until receiving funds from customers. The Company used the
12 45-Day method (otherwise known as the 1/8-Method), which is one way to
13 calculate cash working capital.
14
15 **Q. WHAT IS THE COMPANY'S CWC CLAIM?**
16 A. The Company's CWC claim is $200,448.[50]
17
18 **Q. HOW DID THE COMPANY CALCULATE ITS CWC CLAIM?**
19 A. CUPA W used the 45-Day Method. First, the Company calculated the net total of
20 maintenance expenses, general expenses, taxes other than income, and the

[50] CUPA W Exhibit DMC-1, Section 2, p. 11.

reduction of real estate taxes to arrive at a total of $1,603,586 ($880,985 + $666,474 + $79,294 – $23,167).[51] Then, the Company multiplied the net total by 45 days and divided the result by 360 days to determine the CWC requirement of $200,448 [(45 x $1,603,586) ÷ 360].

Q. DO YOU AGREE WITH THE COMPANY'S USE OF THE 45-DAY METHOD?

A. Yes.

Q. DO YOU HAVE ANY ADJUSTMENTS TO THE COMPANY'S CWC CLAIM?

A. Yes. I recommend an allowance of $180,547 or a reduction of $19,901 ($200,448 - $180,547) to the Company's claim.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. I recommend a CWC allowance of $180,547 that is adjusted to recognize the expense adjustments recommended in Mr. Sakaya's and my testimony for those expenses included in the CWC computation. The adjustments are as follows:

[51] CUPA W Exhibit DMC-1, Section 2, p. 11.

O&M Expenses	Adjustment
Employee Pensions & Benefits	($32,576)
Purchased Power Expense	($38,283)
Chemical Expense	($47,735)
Materials, Supplies, and Other Maintenance Expense	($18,192)
Rate Case Expense	($7,131)
Purchased Water Expense	($15,293)
Total	**($159,210)**

The sum of my O&M adjustments reduces the Company's CWC amount by $19,901 calculated as follows: [(45 x $159,210) ÷ 360].

Q. DOES YOUR RECOMMENDED CWC ALLOWANCE REPRESENT A FINAL RECOMMENDED ALLOWANCE?

A. No. All adjustments to the Company's claims for revenues, expenses, taxes, and rate base must be consistently brought together in the ALJ's Recommended Decision and again in the Commission's Final Order. This process, which is known as iteration, effectively prevents the determination of a precise calculation until such time as all adjustments have been made to the Company's claim.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

PROFESSIONAL AND EDUCATIONAL EXPERIENCE
ZACHARI WALKER

EXPERIENCE:

Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania
March 2021 to Present:
Fixed Utility Financial Analyst, Bureau of Investigation and Enforcement

Bridgestone Retail Operations, LLC, Nashville, Tennessee
December 2014 to July 2020:
Business Manager
Evaluated and validated accounting entry postings. Monitored, reconciled, and corrected daily transactions and accounts. Ensured accuracy of daily reports of business and researched inaccuracies. Utilized data analysis to determine key performance indicators and corresponding trends.

EDUCATION/PROFESSIONAL DEVELOPMENT:

Bridging the Gap, Holly Ridge, North Carolina, 2021
Business Analyst Blueprint Training Program, 36 PD hours earned

Stevenson University, Stevenson, Maryland, 2014
Bachelor of Science, *magna cum laude*, Business Administration
Concentration in Finance

UTILITY-RELATED TRAININGS & OTHER COURSES/WEBINARS:

NARUC Staff Subcommittee on Accounting & Finance, Spring 2021 Virtual Conference, April 6-8, 2021

I&E Statement No. 3
Witness: Esyan A. Sakaya

PENNSYLVANIA PUBLIC UTILITY COMMISSION

V.

COMMUNITY UTILITIES OF PENNSYLVANIA - WATER DIVISION

Docket No. R-2021-3025206

Direct Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:

Test Year
Rate Base
Plant and Reporting Requirements
Rate Structure
Unaccounted-For Water
Public Input Hearing
Quality of Service
Scale Back of Rates

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Esyan A. Sakaya. My business address is Pennsylvania Public Utility Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg, Pennsylvania 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission ("Commission") in the Bureau of Investigation and Enforcement ("I&E") as a Fixed Utility Valuation Engineer.

Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT EXPERIENCE?

A. Appendix A, which is attached to my testimony, describes my educational background and professional experience.

Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.

A. I&E is responsible for protecting the public interest in proceedings before the Commission. The I&E analysis in the proceeding is based on its responsibility to represent the public interest. This responsibility requires balancing the interests of the ratepayers, the company, and the regulated community as a whole.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my testimony is to evaluate Community Utilities of Pennsylvania, Inc. ("CUPA" or "Company") Water Division's request for an annual increase in operating revenue of $757,511. My testimony will address issues related to rate base, reporting requirements, unaccounted for water, rate structure, public input hearing concerns, and the scale back of rates.

Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?

A. Yes. I&E Exhibit No. 3 contains schedules related to my testimony.

Q. SUMMARIZE THE COMPANY'S FILING.

A. In this filing, the Company is proposing to consolidate rates so the customers in the former Penn Estates and Westgate sections (Consolidated system) pay the same rates as the customers in the recently acquired Tamiment system. As part of this consolidation, some of the Tamiment system monthly charges will be reduced. The Company is also proposing to establish a low-income usage rate for low-income customers.

<u>TEST YEAR</u>

Q. WHAT IS A TEST YEAR AND HOW IS IT USED BY A COMPANY IN A RATE PROCEEDING?

A. A test year is the twelve-month period over which a utility's costs and revenues

are measured as the basis for setting prospective base rates. In order to meet its burden of proof, a utility has the option of selecting to use a historic test year ("HTY"), a future test year ("FTY"), or a Fully Projected Future Test Year ("FPFTY"). An HTY is a twelve-month period selected by a company that represents a recent full year of actual data. An FTY begins the day after the HTY ends and is determined using a combination of actual data and a projection of annualized and normalized estimates of future revenues and expenses and a corresponding measure of value at the end of that period. The FPFTY is defined as the twelve-month period that begins with the first month that the new rates will be placed into effect, after the application of the full suspension period permitted under Section 1308(d). The FPFTY is a shift from the fundamental ratemaking principle that a public utility should only be permitted to include projects in rate base and earn a reasonable return on its investments after they become "used and useful" for the utility's public service.

Q. WHAT TEST YEARS HAS THE COMPANY USED IN THIS PROCEEDING?

A. The Company used the year ended December 31, 2020 as the HTY, the year ending December 31, 2021 as the FTY, and the year ending December 31, 2022 as the FPFTY (CUPA-W Section 1, p. 14).

Q. WHAT TEST YEAR HAS THE COMPANY BASED ITS REVENUE REQUIREMENT ON IN THIS PROCEEDING?

A. CUPA based its requested revenue requirement on the FPFTY ending December 31, 2022 (CUPA-W Section 1, p. 9).

<u>RATE BASE</u>

Q. WHAT IS RATE BASE?

A. Rate base is the depreciated original cost of a company's investment in utility plant determined to be used and useful in the public service at the end of the test year. It also includes other additions and deductions that the Commission determines to be necessary in order to keep the utility operating and providing safe and reliable service to its customers.

Q. HOW IS RATE BASE USED WITHIN THE RATEMAKING FORMULA?

A. Rate base is one part of the financial equation used by the Commission to determine the appropriate revenue that a utility is granted in a rate proceeding. The revenue determination allows the utility to meet its expense obligations and gives it the opportunity to earn the rate of return established by the Commission in a rate proceeding. The equation used to determine the proper revenue requirement level is:

Revenue Requirement = (Rate Base x Rate of Return) + Allowable Expenses + Taxes.

Q. HOW IS THE DEPRECIATED ORIGINAL COST OF PLANT-IN-SERVICE AT THE END OF THE TEST YEAR DETERMINED?

A. The depreciated original cost is equal to the original cost of the plant-in-service that is used and useful in the provision of utility service to the customers less the depreciation reserve as adjusted by other items such as salvage value and removal costs. By using a FPFTY, the depreciated original cost of the plant in service is computed by taking a "snapshot" look at the depreciated original cost value of used and useful utility plant estimated to be in service at the end of the FPFTY.

Q. WHAT OTHER ADDITIONS AND DEDUCTIONS TO THE DEPRECIATED ORIGINAL COST OF UTILITY PLANT ARE ALLOWED TO DETERMINE RATE BASE?

A. In general, the type of the utility dictates what additions it is allowed to claim in a rate proceeding. Materials and supplies, prepayments, and cash working capital, among others, are the additions to the depreciated original cost of a company's investment in utility. Some of the deductions include deferred income taxes and customer deposits.

Q. WHAT WAS THE COMPANY'S INITIAL DEPRECIATED ORIGINAL COST AND WHAT ADDITIONS AND DEDUCTIONS IS THE COMPANY PROPOSING TO THE DEPRECIATED ORIGINAL COST?

A. The FPFTY depreciated original cost claimed by the Company in this proceeding

for CUPA's Water Division is $8,630,713 (CUPA-W Section 1, p. 14). The originally claimed additions to the Company's water division depreciated original cost to determine rate base are as follows (CUPA-W filing, p. 1-14):

- Proforma Level of Plant additions;
- Deferred Charges; and
- Cash Working Capital.

The Company also claimed the following deductions to the depreciated original cost:

- Contributions in Aid of Construction (Net);
- Net Plant Acquisition Adjustment;
- Customer Deposits; and
- Accumulated Deferred Income Taxes.

Q. WHAT RATE BASE DID THE COMPANY CLAIM IN ITS FILING?

A. The Company is claiming $9,093,155 of rate base for the FPFTY (Company Filing water division, p. 1-14).

Q. ARE YOU RECOMMENDING ANY ADJUSTMENTS TO THE COMPANY'S RATE BASE?

A. Yes. My adjustment to rate base relates to deferred charges as described below.

PENN ESTATES METER – NET BOOK VALUE

Q. IS THE COMPANY MAKING A CLAIM TO AMORTIZE THE COST OF METERS THAT IT HAS REPLACED WITH AUTOMATIC METER READ ("AMR") METERS?

A. Yes. The Company is claiming $68,823 of unrecovered meter costs be amortized over 10 years beginning January 1, 2022 (CUPA-W St. No. 3, p. 20). This $68,823 represents the net book value ("NBV") of the meters replaced with new AMR meters in 2017.

Q. IS IT REASONABLE TO AMORTIZE THE $68,823 UNRECOVERED COST OF METERS IN THIS CASE?

A. Yes. The Company made the investment in AMR meters to improve customer service, reduce errors and reduce the cost of reading meters.

Q. IS IT REASONABLE TO BEGIN THE AMORTIZATION OF THE $68,823 UNRECOVERED COST OF METERS IN 2022?

A. No.

Q. WHEN DID THE COMPANY BEGIN AMORTIZING THE $68,823 OF METERS?

A. According to the rate base summary, the Company began amortizing the NBV of these meters January 1, 2021 (CUPA-W Summary p. 1-14).

Q. WHEN SHOULD THE COMPANY HAVE BEGUN AMORTIZING THE $68,823?

A. The Company should have begun to amortize the $68,823 on January 1, 2018. Therefore, my recommendation is to begin the 10-year amortization on January 1, 2018.

Q. WHY DO YOU RECOMMEND THE AMORTIZATION BEGIN ON JANUARY 1, 2018?

A. If these meters were still in service, the depreciation expense would have continued from January 1, 2018, through December 31, 2019. My recommendation will allow amortization to begin at the same time the recovery of depreciation expense ended. This recommendation will end the amortization period on December 31, 2028. There is no justification for allowing the Company to improperly allow a three-year gap, and extend the amortization period until December 31, 2031, rather than December 31, 2028.

Q. DOES YOUR RECOMMENDATION TO BEGIN THE AMORTIZATION ON JANUARY 1, 2018 REDUCE RATE BASE?

A. Yes. The annual amortization of $68,823 over 10 years is $6,882 per year. Therefore, my recommendation reduces rate base by $20,646 ($6,882 x3) in order to capture the three years that the Company failed to amortize the meters.

1 **PLANT AND REPORTING REQUIREMENTS**

2 **Q. WHAT IS PLANT IN SERVICE?**

3 A. The plant in service is the part of the utility's rate base investment in plant used
4 and useful to provide service to the public.

5

6 **Q. WHAT IS THE COMPANY CLAIMING FOR PLANT IN SERVICE FOR**
7 **THE FTY AND FPFTY?**

8 A. The Company's claim for utility plant in service is $14,058,524 for the FTY
9 ending December 31, 2021 and $15,352,282 for the FPFTY ending December 31,
10 2022 (CUPA-W Filing Section 1, p. 17).

11

12 **Q. WHAT IS THE COMPANY'S CLAIM FOR PLANT ADDITIONS IN EACH**
13 **TEST YEAR?**

14 A. The Company's claim for plant additions in the FTY is $1,360,180 with
15 corresponding retirements of $73,880. The Company's claim for plant additions
16 in the FPFTY is $1,370,812 with corresponding retirements of $77,054 (CUPA-W
17 Supporting Data, Section 1, p. 17).

18

19 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING PLANT**
20 **ADDITIONS THAT THE COMPANY PROJECTS TO BE IN SERVICE**
21 **DURING THE FTY AND THE FPFTY?**

22 A. Yes. I recommend that the Company provide the Commission's Bureaus of

Technical Utility Services and Investigation and Enforcement with an update to CUPA Water Section 1, p. 17 of the filing no later than April 1, 2022, under this docket number, which should include actual capital expenditures, plant additions, and retirements by month for the twelve months ending December 31, 2021. An additional update should be provided for actuals through December 31, 2022, no later than April 1, 2023.

Q. WHY DO YOU RECOMMEND THAT CUPA PROVIDE THESE UPDATES?

A. I&E believes that there is value in determining how closely CUPA's projected investments in future facility compare with the actual investments that are made by the end of the FTY and FPFTY. Determining the correlation between CUPA's projected and actual results will help inform the Commission and the parties in CUPA's future rate cases.

The updates are important because, as previously explained, through the use of the FPFTY, CUPA is essentially requiring ratepayers to pre-pay a return on its projected investment in future facilities that are not in place and providing service at the time the new rates take effect, but also are not subject to any guarantee of being completed and placed into service. While the FPFTY provides for such projections, there should be verification of the projections. Therefore, requiring the Company to provide updates demonstrating that actual investments

comport with projections used in setting rates using the FPFTY provides the Commission with actual data to gauge the accuracy of CUPA's projected.

UNACCOUNTED-FOR WATER

Q. WHAT IS UNACCOUNTED-FOR WATER?

A. Unaccounted-for water ("UFW") is the difference between the total system output and the metered quantity of water billed plus an estimate for the amount used for fire service, testing, main flushing, and unmetered company use.

Q. DOES THE COMMISSION HAVE A POLICY STATEMENT REGARDING THE LEVEL OF UNACCOUNTED-FOR WATER THAT IS ACCEPTABLE?

A. Yes. The Commission policy statement on water conservation is set forth in 52 Pa. Code § 65.20(4), which reads as follows:

> (4) *Unaccounted-for water.* Levels of unaccounted-for water should be kept within reasonable amounts. Levels above 20% have been considered by the Commission to be excessive.

Q. WHAT ARE THE CAUSES OF UNACCOUNTED-FOR WATER?

A. The primary causes of unaccounted-for water are: 1) under registration of meters; 2) leaks in mains, hydrants, and services; 3) theft of service; and 4) natural losses.

Q. WHY IS IT IMPORTANT TO REDUCE UNACCOUNTED-FOR WATER?

A. A reduction in the amount of unaccounted-for water reduces the expense incurred by a utility by reducing the amount of water that needs to be pumped, treated, and sent out into the distribution system. It also lowers the amount of water available to customers, especially during peak demand periods, and improves overall quality of service.

Q. WHAT IS THE COMPANY'S OVERALL UFW LEVEL?

A. In the Company's response to I&E-RB-1 2-D, the Company sent a series of spreadsheets that detailed the levels of UFW for a 36-month period from January 2018 to December of 2020. During this period, the Company sent out 565,309, 634 gallons and reported UFW of 126,491,048 gallons. The overall percentage of UFW during this period averaged 22.38% (I&E Ex. 3, Sch. No. 1, p. 1, col. K, line 13). In summary, the Company has a combined three-year average of UFW at all three facilities that is above the 20% level. As previously stated, this percentage is considered excessive by Commission standards.

Q. WHAT PERCENTAGE OF UFW WAS REPORTED IN THE WESTGATE SERVICE TERRITORY?

A. The UFW average in the Westgate division s was 10.13% over a 36-month period from January 2018 to December of 2020 (I&E Ex. No. 3, Sch. No. 4, p. 1, col. K, line 13).

Q. WHAT PERCENTAGE OF UFW WAS REPORTED IN THE PENN ESTATES SERVICE TERRITORY?

A. The UFW average in the Penn Estates division was 21.95% over a 36-month period from January 2018 to December of 2020 (I&E Ex. No. 3, Sch. No. 4, p 2, col. K, line 13). This 21.95% of UFW exceeds the acceptable level established by the Commission's policy statement by 1.95%. This number is slightly higher than the Commission's policy, as the Company reported the percentage levels of UFW fluctuated between 21.54% in 2018, 26.80% in 2019, and 17.69% in 2020.

Q. WHAT PERCENTAGE OF UFW WAS REPORTED IN THE TAMIMENT SERVICE TERRITORY?

A. While acquired by CUPA in 2019, the UFW average for the Tamiment division was 58.02% over a 36-month period from January 2018 to December of 2020 (I&E Ex. No. 3, Sch. No. 4, p. 2, col. K, line 13). The Tamiment system did not become part of CUPA until August of 2019, and Tamiment data is only provided on a quarterly basis

Q. ARE YOU RECOMMENDING ANY ADJUSTMENTS TO THE COMPANY'S DETERMINATION OF UFW?

A. Yes, the Company's 20,255,050-gallon adjustment for main breaks/leaks and 6,064,222-gallon adjustment labeled as "adjustment" used to determine UFW are

improper and should be removed. These amounts are shown on I&E Ex. 3, Sch. No. 1, p. 1, cols. F and H, line 13.

Q. WHY DO YOU RECOMMEND ADJUSTMENTS TO THE COMPANY'S DETERMINATION OF UFW?

A. As described above, the determination of UFW does not include adjustments for main breaks/leaks and "adjustments." The Commission allows utilities to have UFW up to 20% to account for main breaks, leaks, and unknown losses. Therefore, they should not be removed or "adjusted" from the UFW calculation.

Q. WHAT IS YOUR CALCULATION OF THE COMPANY'S UFW?

A. After I removed the Company's adjustments, I determined that the Company has 152,780,320 gallons, or 27.03%, of UFW (I&E Ex. 3, Sch. No. 1, line 14). This level is 39,718,300 gallons in excess of the 20% UFW guideline (I&E Ex. 3, Sch. No. 1, p. 1, col. J, line 15).

Q. DO YOU RECOMMEND AN EXPENSE ADJUSTMENT TO REMOVE THE COST OF THIS EXCESS UFW?

A. Yes. I recommend a $30,751 adjustment to expenses to remove the cost of the 39,718,300 gallons of excess UFW. The $30,751 was determined by multiplying the $0.774 cost per gallon to purchase / produce 1,000 gallon of water times the 39,718,300 gallons of excess water (I&E Ex. 3, Sch. No. 1, p. 2, col. E, line 5).

Q. HOW DID YOU DETERMINE THE $0.774 PER THOUSAND GALLON COST TO PURCHASE OR PRODUCE WATER?

A. The Company incurs $0.188 per thousand gallons in purchased power expense to produce water, $0.385 per thousand gallons to purchase water and $0.201 per thousand gallons for chemicals to treat water (I&E Ex. No. 3, Sch. 1, p. 2, col. D, line 3). The results in a total incremental cost to produce and purchase water of $0.774 per thousand gallons. To determine these incremental costs to produce or purchase water, I divided the total water production into each 2020 cost on a total Company basis (I&E Ex. 3, Sch. No. 1, p. 2, cols. B through D, lines 2-3).

<u>RATE STRUCTURE - PRESENT AND PROPOSED RATES</u>

Q. WHAT RATES DOES THE COMPANY CURRENTLY CHARGE FOR WATER SERVICE?

A. For 5/8th inch customers in the Consolidated system, the Company applies a present customer charge of $17.25 per month and a usage rate of $9.283 per thousand gallons. For 5/8th inch customers in the Tamiment division, the Company applies a present customer charge of $54.55 per month and a usage rate of $5.13 per thousand gallons. For customer with meters larger than 5/8th inch, the Company applies a higher monthly charge and the same corresponding usage rates. For availability customers, the Company applies a flat rate of $18.81 per month in the Consolidated system and $19.14 per month in the Tamiment system.

For public fire service in the Combined system, the Company applies a flat rate of $32.18 per month (CUPA-St. No. 3, Section 2, Supporting Sch. No. 1 p. 2).

Q. WHAT RATES DID THE COMPANY INITIALLY PROPOSE FOR ITS CUSTOMERS?

A. For all 5/8th inch customers, the Company initially proposed a $23.10 per month customer charge with a usage rate of $11.925 per thousand gallons for residential customers and a usage rate of $10.989 per thousand gallons for commercial customers. For low-income residential customers, the Company is proposing a usage rate of $4.126 per thousand gallons. For customers with meters larger than 5/8th inch, the Company applies a higher monthly charge and the same corresponding usage rates. For availability customers, the Company is proposing a flat rate of $14.00 per month. For public fire service, the Company applies a flat rate of $120.52 per month (CUPA-W Supporting Section 2, Supporting Sch. 2.

Q. DID THE COMPANY PROPOSE TO REVISE ITS RATES TO CORRECT THE INCREASE IN REVENUE BY CLASS IN TESTIMONY?

A. Yes. For all 5/8th inch customers, the Company is proposing a $24.84 per month customer charge and a usage rate of approximately $11.93 per thousand gallons for residential customers and a usage rate of approximately $10.99 per thousand gallons for commercial customers. For low-income residential customers, the Company is proposing a usage rate of approximately $4.13 per thousand gallons

(I&E Ex. No. 3, Sch. 2, p. 1, col. E, lines 23-27). For customer with meters larger than 5/8th inch, the Company applies a higher monthly charge and the same corresponding usage rates. For availability customers, the Company is proposing a flat rate of $15.32 per month. For public fire service, the Company applies a flat rate of $118.93 per month. I summarized these revised rates on I&E Ex. No. 3, Sch. 2, p. 1, col. E, lines 14-16. These revised rates produce an increase of $757,495 and $2,823,024 in total revenue. The $757,495 is an increase of 36.7% ($757,495 / $2,065,539) (CUPA-W St. No. 3, Summary p. 1-9).

Q. DO YOU AGREE WITH ALL OF THE REVISED RATES PROPOSED BY THE COMPANY?

A. No. As described below, the proposed Public Fire Service, and 6-inch customer charge, and availability charges proposed by the Company are too high. I also recommend that the proposed low-income usage rate should not be implemented.

Q. WHAT IS GRADUALISM AND WHY SHOULD THE CONCEPT OF GRADUALISM BE FOLLOWED?

A. Gradualism refers to slowly increasing a rate over time rather than all at once. The concept of gradualism should be followed so that specific customers do not receive a sudden large increase in their bill compared to other customers. This allows customers to slowly become accustomed to paying a higher rate over time.

Q. WITHOUT A COST OF SERVICE STUDY TO GUIDE IN THE DEVELOPMENT OF PROPOSED RATES, WHAT IS A REASONABLE GUIDELINE TO FOLLOW?

A. A general guideline is to increase all rates the same percentage as the system average percent. This is a reasonable methodology to spread the required increase over all customers in a proportional manner. This guideline generally applies when there is no need to consolidate rates from different systems. If there is a need to consolidate rates, the percentage increase could be higher.

Q. WHAT ARE THE PRESENT AND PROPOSED PUBLIC FIRE SERVICE RATE?

A. The present Public Fire service rate is $32.18 per month. The Company is proposing to increase this rate to $118.73 per month. This equates to an increase of $86.55 per month over the present rate of $32.18 per month or 269.0% ($86.55/ $32.18) (I&E Ex. 3, Sch. No. 2, p. 1, line 14).

Q. WITH THE CONCEPT OF GRADUALISM IN MIND, WHAT PUBLIC FIRE SERVICE RATE DO YOU RECOMMEND?

A. I recommend a Public Fire service rate of $44.00 per month. This equates to an increase of $11.82 per month over present rates of $32.18 per month or 36.7% ($11.82 / $32.18) over the Company's present rate of $32.18 per month (I&E Ex. 3, Sch. No. 2, p. 1, col. I, line 14).

Q. WHY DO YOU RECOMMEND LIMITING THE INCREASE TO PUBLIC FIRE SERVICE TO APPROXIMATELY 36.7%?

A. I believe the Company's proposed 269.0% increase is too much of an increase in one case (I&E Ex. 3, Sch. No. 2, p. 1, col. F, line 14). The Company did not provide a cost of service study to support a specific increase in Public Fire service rates. Therefore, I recommend an increase of 36.7%, which is the same as the system average increase proposed by the Company (I&E Ex. 3, Sch. No. 2, p. 1, col. J, line 14).

Q. WHAT ARE THE PRESENT AND PROPOSED SIX-INCH METER CUSTOMER CHARGE?

A. The present six-inch customer charge is $121.25 per month. The Company is proposing to increase this customer charge to $873.09 per month. This equates to an increase of $751.84 per month over the present rate of $121.25 per month or 620.1% ($751.84 / $121.25) (I&E Ex. 3, Sch. No. 2, p. 1, line 12).

Q. WHAT 6-INCH CUSTOMER CHARGE DO YOU RECOMMEND?

A. I recommend a 6-inch customer charge of $166.00 per month (I&E Ex. 3, Sch. No. 2, p. 1, col. I, line 12). This equates to an increase of $44.75 per month or 36.9% ($44.75 / $121.25). This 36.9% increase is the approximate system average increase being proposed by the Company (I&E Ex. 3, Sch. No. 2, p. 1, col. I and J, line 12).

Q. WHY DO YOU RECOMMEND LIMITING THE INCREASE TO THE 6-INCH CUSTOMER CHARGE TO APPROXIMATELY 36.9%?

A. As described above, the Company is proposing to increase the 6-inch customer charge 620.1%. This 620.1% increase violates the concept of gradualism describe above. To moderate this increase, I recommend the 6-inch customer charge be increased 36.9% so that this customer receives an increase closer to the system average increase (I&E Ex. 3, Sch. No. 2, p. 1, col. J, line 12).

Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL TO IMPLEMENT A LOW INCOME USAGE RATE?

A. No, I recommend the Company not implement a low-income usage rate of $4.13 per thousand gallons, which is a discount of $7.80 off the proposed usage rate of $11.93 per thousand gallons (CUPA-W St. No. 3, Section 2, Supporting Sch. 1).

Q. PLEASE EXPLAIN WHY YOU RECOMMEND THE LOW INCOME USAGE RATE BE REJECTED.

A. A low-income usage rates results in a revenue shortfall that must be recovered from other customers. Therefore, rates for other customers (either the usage rate of $11.93 per thousand gallons or the monthly customer charge) are higher to make up for the lower revenue received from low-income customers.

Q. DO YOU HAVE ANY OTHER REASONS WHY THE LOW-INCOME RATE AS PROPOSED SHOULD BE REJECTED?

A. Yes. My second concern is that the proposed discount of 65.4% per thousand gallons is simply too large. CUPA is proposing that low-income customers pay a usage rate of $4.13 per thousand gallons in lieu of the full usage rate of $11.93 per thousand gallons, which is a discount of $7.80 per thousand gallons ($11.93 - $4.126). Under this proposal, a customer that uses 3,000 gallons per month would pay $12.39 ($4.13 x 3) for their usage while a customer paying the full usage rate would be charged $35.79 ($11.93 x 3). This discount of $23.40 per month is too large, especially when compared to low-income rates offered by other utilities. For example, PAWC's current low-income program offers customers a 15% customer charge discount. This equates to a discount of approximately $2.55 ($17.00 x 0.15) per month (I&E Ex. No. 3, Sch. 3). As a result, CUPA's $23.40 discount in my example is over nine times the discount PAWC offers its low-income water customers ($23.40 / $2.55 = 9.17).

Q. WHAT INCREASE IS THE COMPANY PROPOSING FOR THE AVAILABILTY CHARGE?

A. The Company is proposing to convert the current rate of approximately $19.00 per quarter to $15.32 per month. Converting the current $19.00 per quarterly rate to an effective monthly rate results in a rate of $6.33 ($19.00 / 3) per month. The

Company's proposed availability charge of $15.32 per month equates to an increase of $8.99 per month or approximately 141.8% ($15.32 - $6.33)/$6.33).

Q. WHAT AVAILABILTY CHARGE DO YOU RECOMMEND?

A. I recommend an availably charge of $8.70 per month. This equates to an increase of $2.37 per month or 37.4% ($2.37/ $6.33) (I&E Ex. 3, Sch..2, p. 1, lines 14-15). This 37.4% is comparable to the system average increase of 36.7% described above.

Q. WHY DO YOU RECOMMEND LIMITING THE INCREASE TO THE AVAILABILITY CHARGE TO $8.70 PER MONTH?

A. As described above, the Company did not provide a cost of service study that would support a higher availability charge. Therefore, increasing the availably charge the same percentage as the total system is reasonable. I also believe the 141.8% ($6.33 / $8.98) increase proposed by the Company is too large for one case and violates the concept of gradualism described above.

Q. WHAT IS THE TOTAL IMPACT OF YOUR RATE RECOMMENDATIONS?

A. Lowering the Public Fire service rate reduces proposed revenue by $55,599 and lowering the 6-inch customer charge reduces proposed revenue by $16,970. Eliminating the low-income usage rate of $4.13 per thousand gallons increases

proposed revenue by $137,720. Lowering the availability charge reduces revenue by $29,644. Taken together my rate changes result in approximately $35,487 of additional revenue (I&E Ex. No.3, Sch. 2. p. 3, lines 23-27).

Q. WHAT DO YOU RECOMMEND TO ELIMINATE THE $35,487 OF ADDITIONAL REVENUE AS A RESULT OF YOU RATE CHANGES?

A. I recommend that the proposed monthly 5/8th inch residential and commercial monthly charge be lowered from $24.84 to $23.94 per month. This $0.90 reduction will reduce revenue by $35,487 (I&E Ex. No.3, Sch. 2. p. 3, line 28).

Q. WHAT IS THE TOTAL IMPACT OF ALL YOUR RATE CHANGES ABOVE?

A. The net impact of all the rate changes above is approximately zero. The result is a revenue increase of $757,496 (I&E Ex. No.3, Sch. 2. p. 2, col. I, line 15).

<u>PUBLIC INPUT HEARING</u>

Q. WHAT IS A PUBLIC INPUT HEARING AND WHY IS IT IMPORTANT?

A. The purpose of the public input hearing is to hear from the ratepayers, regarding CUPA's request to increase water and wastewater rates. Ratepayers are given the opportunity to voice their concerns involving quality of service issues and the impact of potential rate increases.

Q. WHEN WAS THE PUBLIC INPUT HEARING HELD AND WHAT WERE THE ISSUES RAISED CONCERNING WATER SERVICE?

A. On June 29, 2021, a telephonic public input hearing was held in which CUPA expressed frustration over the proposed rate increases. In addition, customers throughout the proceeding expressed concerns about the quality of water service provided by the Company. Specifically, customers provided testimony describing sediment in the water (Public Input Tr., pp. 45, 60, 120, 135, 186-187, 191 235, 241); brown water or residue which at time damaged equipment and laundry (Public Input Tr., pp 186-187, 190, 198, 222, 235); general testimony of bad water and/or low-quality water (Public Input Tr., pp. 102, 105, 107, 114-115, 141, 148-150, 169, 186, 199-200, 235). Customers also described the need to buy bottled water as opposed to drinking and cooking with the water from CUPA's water supply (Public Input Tr., pp. 110, 121, 122-123, 135, 137, 153, 228, 232).

Q. DID CUSTOMERS ALSO EXPRESS CONCERN ABOUT BOIL WATER ADVISORIES?

A. Yes. Customers testified that the Company does not timely notify customers of boil water advisories (Public Input Tr., pp. 45-46. 141). Another customer testified that there were two boil water advisories during a ten-day period (Public Input Tr., pp. 105-106).

Q. WHAT DO YOU RECOMMEND BASED UPON PUBLIC INPUT HEARING?

A. While I understand that I&E's primary recommendation in this proceeding is that CUPA receive 0.0% return on equity in this proceeding due to quality of service concerns as presented in I&E Statement No. 2, I further recommend that CUPA track and report customer complaints, service interruptions, main breaks, boil water advisories, and provide the Company's response to each event. I recommend that the report be filed one year after the order is entered in this proceeding and each year for the next 3 years thereafter.

Q. WHY DO YOU RECOMMEND THE COMPANY TRACK AND REPORT CUSTOMER COMPLAINTS AND SERVICE ISSUES?

A. The Company is required to provide adequate, safe, and reasonable water service. The issues raised at the public input hearing call into question whether the Company is adhering to this mandate. Reporting its findings with respect to customer complaints and service issues will inform the Commission and interested parties about the status of these issues with the goal of improving service in its territory.

1 **SCALE BACK OF RATES**

2 **Q. IF THE COMMISSION GRANTS LESS THAN THE FULL INCREASE**
3 **REQUESTED BY THE COMPANY, WHAT RATES SHOULD BE**
4 **SCALED BACK?**

5 A. If the Commission grants less than the full revised requested amount of
6 approximately $757,500, I recommend that the customer charges and usage rates
7 that were increased be reduced proportionally to the percentage increase shown on
8 I&E Exhibit No. 3, Sch. 2, p. 1, col. J. This includes the consolidated customer
9 charges on lines 1-5, and lines 11-12, and 18-21. The 6-inch customer charge,
10 Public Fire rate, and availability charge should be reduced so that the percentage
11 increase for these rates is the same as the system average increase. The
12 corresponding Tamiment rates should match the rates in the Consolidated system
13 as part of the scale back.

14

15 **Q. WHY DO YOU RECOMMEND A PROPORTIONAL SCALE BACK?**

16 **A.** The Company did not provide a cost of service study to analyze the revenue
17 received and expenses incurred to provide service to each class, therefore, a
18 proportional scale back is the most reasonable approach to establish rates if the
19 Commission grants less than the full increase.

20

21 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

22 **A.** Yes.

PROFESSIONAL AND EDUCATION EXPERIENCE
ESYAN A. SAKAYA

EDUCATION:

National Association of Regulatory Utility Commissioners, Clearwater, FL
Utility Rate School; Utility Rate Making Basics, October 2019

Society of Depreciation Professionals, Philadelphia, PA
Introduction to Depreciation; Depreciation Fundamentals, September 2019

Temple University, Philadelphia, PA
Bachelor of Science; Major in Engineering Technology, 2015

Community College of Philadelphia, Philadelphia, PA
Associate of Applied Science; Major in Construction Management Technology, 2011

Island School of Building Arts, Gabriola Island, BC-Canada
Certificate Graduate: Heavy Timber Construction Aug 2002-Nov 2002

Solar Energy International, Carbondale, CO
Certificate Graduate: Basic and Advanced Photovoltaic Design, April 2002-May 2002

EXPERIENCE:

12/2018-Present
Pennsylvania Public Utility Commission-Harrisburg, PA
Fixed Utility Valuation Engineer- Assist in engineering related studies related to valuation, depreciation, cost of service, quality of service as they apply to regulated utilities. Contribute in evaluating, contrasting and conducting performance analyses in distinctive sections of valuation engineering and rate structure involving valuation concepts, original cost, rate base, fixed capital costs, inventory processing, excess capacity, cost of service, and rate design. Provide expert testimony in rate related utility cases.

4/2018-12/2018
Pennsylvania Department of Transportation-Harrisburg, PA
Photogrammetry Technician I- Created three-dimensional mapping layouts of natural and man-made features from stereoscopic images on a computer workstation. Assisted in the field placement of ground based surveyed control-points prior to aerial photography acquisition. Provided field support in the use of laser scans for comprehensive digital surveying data. Operated global positioning satellite surveying equipment to obtain accurate geodetic coordinates of pre-established benchmarks.

EXPERIENCE cont.:

8/2017-4/2018
Pennoni and Associates. Consulting Engineers-King of Prussia, PA
Construction Inspector-Provided quality assurance in the onsite material testing of concrete, soils, and asphalt. Read and interpreted construction drawings and specifications of materials and components. Completed daily reports regarding project progress to engineers, project managers/superintendents, contractors and clients.

TESTIMONY SUBMITTED:

I have assisted and/or submitted testimony in the following proceedings:

No.	Case
1.	UGI Gas Utilities - Gas Division, Docket Number: R-2018-3006814
2.	Newtown Artesian Water Company, Docket Number: R-2018-3006904
3.	Pittsburgh Wastewater, Docket Number: M-2018-2640803
4.	PAWC Purchase of Steelton, Docket Number: A-2019-3006814
5.	Philadelphia Gas Works, Docket Number: R-2019-3009016 - 3007636
6.	Community Utilities Water, Docket Number: R-2019-3008947
7.	Aqua Purchase of Cheltenham, Docket Number: A-2019-3008491
8.	UGI NORTH, Docket Number: R-2019-3009647
9.	UGI CENTRAL, Docket Number: R-2019-3009647
10.	UGI SOUTH, Docket Number: R-2019-3009647
11.	Twin Lakes Utilities, Docket Number: R-2019-3010958
12.	Penn Power Company, Docket Number: P-2019-3012628
13.	UGI Gas Utilities, Docket Number: R-2019-3015162
14.	National Fuel and Gas Distribution, Docket Number: R-2020-3015251
15.	Columbia Gas of Pennsylvania, Docket Number: R-2020-3018993 -3018835
16.	Duquesne Light Company, Docket Number: P-2020-3019522
17.	PA American Water Company, Docket Number: R-2020-3019369 – 310937
18.	Bethlehem Water Company, Docket Number: R-2020-3020256
19.	Audubon Water Company, Docket Number: R-2020-3020919
20.	Twin Lakes Utilities, Docket Number: P-2020-3020914
21.	Duquesne Light Company, Docket Number: R-2021-3024750

I&E Exhibit No. 3
Witness: Esyan A. Sakaya

PENNSYLVANIA PUBLIC UTILITY COMMISSION

V.

COMMUNITY UTILITIES OF PENNSYLVANIA - WATER DIVISION

Docket No. R-2021-3025206

Exhibit to Accompany

The

Direct Testimony

Of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:

Test Year
Rate Base
Plant and Reporting Requirements
Rate Structure
Unaccounted-For Water
Public Input Hearing
Scale Back of Rates

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
UFW

2018-2020

WATER USED OR LOST

(A) Line No.	(B) Date	(C) Subdivision	(D) Water oduced/Purchas	(E) WWTP	(F) Main Breaks/Leaks	(G) Flushing	(H) Adjustments	(I) Total Water Sold	(J) Unaccounted For Water	(K) Percent Unaccounted
1	Jan	CUPA	43,849,107	44,265	4,514,400	260,000	499,442	31,194,787	7,336,213	16.73%
2	Feb	CUPA	37,876,803	51,760	1,132,600	263,323	461,131	27,975,189	7,992,800	21.10%
3	Mar	CUPA	50,358,540	56,846	619,640	348,665	450,244	32,142,555	16,740,590	33.24%
4	Apr	CUPA	39,997,329	73,157	148,200	425,505	429,651	31,849,281	7,071,535	17.68%
5	May	CUPA	44,695,608	85,827	494,640	915,587	500,000	31,951,703	10,747,851	24.05%
6	Jun	CUPA	57,112,200	658,762	774,300	1,356,884	489,805	40,353,989	13,478,460	23.60%
7	Jul	CUPA	48,309,070	185,492	7,512,380	425,000	525,530	35,982,509	3,678,159	7.61%
8	Aug	CUPA	43,646,411	114,924	883,440	271,900	612,850	33,501,157	8,262,140	18.93%
9	Sep	CUPA	58,403,238	90,261	843,200	750,000	532,144	37,862,812	18,324,821	31.38%
10	Oct	CUPA	40,754,222	106,061	2,003,450	750,000	527,182	30,645,028	6,722,501	16.50%
11	Nov	CUPA	38,067,997	93,692	200,000	670,000	550,182	29,577,447	6,976,676	18.33%
12	Dec	CUPA	62,239,109	212,531	1,098,800	575,000	486,061	40,707,415	19,159,302	30.78%
13		**Company Total**	565,309,634	1,773,578	20,225,050	7,011,864	6,064,222	403,743,872	126,491,048	**22.38%**
14		**I&E Total**	565,309,634	1,773,578	0	7,011,864	0	403,743,872	152,780,320	**27.03%**
15		**Adjustment**	0	0	0	0	0	0	-39,718,300	**0.00%**
16		**Target UFW**	565,309,634	1,773,578	0	7,011,864	0	403,743,872	113,062,020	**20.00%**

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
Unaccounted For Water

Line No.	(A)	(B)	(C)	(D)	(E)
		Purchased Power	Purchase Water	Chemicals	TOTAL
1	Expense*	$106,110	$217,663	$113,899	$437,672
2	Total Send Out	565,309,634	565,309,634	565,309,634	565,309,634
3	Cost Per Thousand	$0.188	$0.385	$0.201	$0.774
4	Excess UFW	-39,718,300	-39,718,300	-39,718,300	-39,718,300
5	UFW Adjustment	**-$7,455**	**-$15,293**	**-$8,002**	**-$30,751**

* CUPA Filing 1-12

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
Company and I&E Rates

Line No.	Customer Charge	Meter Sizes	Company Present Monthly Rates	Company Increase	Company Monthly Rates	Percent Increase	I&E Present Monthly Rates	I&E Increase	I&E Monthly Rates	Percent Increase
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
1	**CONSOLIDATED**									
2	**Residential and Commercial**	5/8"	$17.25	$7.59	$24.84	44.0%	$17.25	$6.69	$23.94	38.8%
3		1"	$43.13	$7.68	$50.81	17.8%	$43.13	$7.68	$50.81	17.8%
4		1.5"	$86.25	$7.83	$94.08	9.1%	$86.25	$7.83	$94.08	9.1%
5		2"	$138.00	$8.02	$146.02	5.8%	$138.00	$8.02	$146.02	5.8%
6	**TAMIMENT**									
7	**Residential**	5/8"	$54.55	($29.71)	$24.84	-54.5%	$54.55	($30.61)	$23.94	-56.1%
8	**Commercial**	5/8"	$121.25	($96.41)	$24.84	-79.5%	$121.25	($97.31)	$23.94	-80.3%
9		1"	$121.25	($70.44)	$50.81	-58.1%	$121.25	($70.44)	$50.81	-58.1%
10		1.5"	$121.25	($27.17)	$94.08	-22.4%	$121.25	($27.17)	$94.08	-22.4%
11		2"	$121.25	$24.77	$146.02	20.4%	$121.25	$24.77	$146.02	20.4%
12		6"	$121.25	$751.84	$873.09	620.1%	$121.25	$44.75	**$166.00**	**36.9%**
13	**Unmetered Water**									
14	Unmetered Public Fire Protection (Hydrants)-FTY and FPFTY		$32.18	$86.55	$118.73	269.0%	$32.18	$11.82	**$44.00**	**36.7%**
15	Unmetered - Other Availability		$18.81	($3.49)	$15.32	-18.6%	$18.81	($10.11)	$8.70	-53.7%
16	Unmetered - Tamiment		$19.14	($3.82)	$15.32	-20.0%	$19.14	($10.44)	$8.70	-54.5%

	Consumption Charge		Company Present Rates Per 1,000 Gallons	Company Increase	Company Proposed Rates Per 1,000 Gallons	Percent Increase	I&E Present Rates Per 1,000 Gallons	I&E Increase	I&E Proposed Rates Per 1,000 Gallons	Percent Increase
17	**Consolidated Residential**									
18		5/8"	$9.283	$2.642	$11.926	28.5%	$9.283	$2.642	$11.926	28.5%
19		1"	$9.283	$2.642	$11.926	28.5%	$9.283	$2.642	$11.926	28.5%
20		1.5"	$9.283	$2.642	$11.926	28.5%	$9.283	$2.642	$11.926	28.5%
21		2"	$9.283	$2.642	$11.926	28.5%	$9.283	$2.642	$11.926	28.5%
21	**Low Income Residential**									
22		5/8"	$9.283	($5.157)	$4.126	-55.6%	$9.283	$2.643	**$11.926**	**28.5%**
23		1"	$9.283	($5.157)	$4.126	-55.6%	$9.283	$2.643	**$11.926**	**28.5%**
24		1.5"	$9.283	($5.157)	$4.126	-55.6%	$9.283	$2.643	**$11.926**	**28.5%**
25		2"	$9.283	($5.157)	$4.126	-55.6%	$9.283	$2.643	**$11.926**	**28.5%**
26	**Tamimient**									
27	Residential	All	$5.130	$6.800	$11.930	132.6%	$5.130	$6.796	$11.926	132.5%
28	Commercial	All	$5.130	$5.855	$10.985	114.1%	$5.130	$5.855	$10.985	114.1%
29	**Commercial**									
30		5/8"	$9.283	$1.702	$10.985	18.3%	$9.283	$1.702	$10.985	18.3%
31		1"	$9.283	$1.702	$10.985	18.3%	$9.283	$1.702	$10.985	18.3%
32		1.5"	$9.283	$1.702	$10.985	18.3%	$9.283	$1.702	$10.985	18.3%
33		2"	$9.283	$1.702	$10.985	18.3%	$9.283	$1.702	$10.985	18.3%

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
Statement of Operating Revenue Under the Existing and Proposed Rates for the Base Year Ended
December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (b)(4)

Line No.	Water Operations	Schedule Number	Base Year Ended 12/31/2020	Change	Future Test Year Ended 12/31/2021	Change	Future Test Year Ended 12/31/2022	Change	Proposed FPFTY Ended 12/31/2022	Overall Percentage FPFTY Change 12/31/2022
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	**Volumetric Revenue**	**(b)(2)**								
2	Residential	(b)(2)	$1,312,556	($18,245)	$1,294,311	($17,991)	$1,276,320	$478,461	$1,754,782	**37.5%**
3	Commercial	(b)(2)	$18,296	($254)	$18,041	($251)	$17,791	$4,315	$22,105	**24.3%**
4	**Total Volumetric Revenue**		**$1,330,851**	**($18,499)**	**$1,312,353**	**($18,242)**	**$1,294,111**	**$482,776**	**$1,776,887**	**37.3%**
5	**Flat/Base Rate Revenue**									
6	Residential	(b)(2)	$687,585	($0)	$687,585	$0	$687,585	$259,252	$946,836	**37.7%**
7	Commercial	(b)(2)	$17,562	$0	$17,562	$0	$17,562	$53	$17,615	**0.3%**
8	Availability	(b)(2)	$35,394	$0	$35,394	$0	$35,394	$3,608	$39,002	**10.2%**
9	Fire Hydrant	(b)(2)	$24,831	($3,902)	$20,929	$0	$20,929	$11,807	$32,736	**56.4%**
10	**Total Flat Rate Revenue**		**$765,371**	**($3,902)**	**$761,469**	**$0**	**$761,469**	**$274,720**	**$1,036,189**	**36.1%**
11	Forfeited Discounts	(b)(2)	($1,407)	$7,544	$6,137	$0	$6,137	$0	$6,137	**0.0%**
12	Miscellaneous Service Revenues	(b)(2)	$4,905	($1,095)	$3,810	$0	$3,810	$0	$3,810	**0.0%**
13	Purchased Services	(b)(2)	$0	$0	$0	$0	$0	$0	$0	
14	Accruals	(b)(2)	($56,290)	$56,290	$0	$0	$0	$0	$0	
15	**Total Operating Revenues**		**$2,043,431**	**$40,338**	**$2,083,769**	**($18,242)**	**$2,065,527**	**$757,496**	**$2,823,023**	**36.7%**
16	**Going Level Adjustments [1]**									
17	**Customer Classification**									
18	Residential	($18,245)								
19	Commercial	($254)								
20	**School**									
21	Availabiliy	$0								
22	Commercial	$0								
23	Availability	$0								
24	Fire Hydrant	($3,902)								
25	**See Supporting Schedule No. 1**	**($22,401)**								
26	**Future Test Year Ended 12/31/21 Adjustments (1)**									
27	Residential	($17,991)								
28	Commercial	($251)								
29	**School**									
30	Availability	$0								
31	Commercial	$0								
32	Availability	$0								
33	Fire Hydrant	$0								
34	**See Supporting Schedule No. 2**	**($18,242)**								
35	**FPFTY Ended 12/31/22 Adjustments**									
36	**Volumetric Revenue**									
37	Residential	$478,461								
38	Commercial	$4,315								
39	**Flat/Base Rate Revenue**									
40	Residential	$259,252								
41	Commercial	$53								
42	Availability	$3,608								
43	Fire Hydrant	$11,807								
44	**See Supporting Schedule No. 2**	**$757,496**								

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
Base Year / Proposed Revenues
31-Dec-22

Line No.	Customer Class	Meter Size	Gallonage	Proposed Usage Charge	Volumetric Revenue	Units	Proposed Customer Charge	Proposed Base Revenue	Adjustment	Total Proposed Rate Revenue
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
1	Residential									
2		5/8"	129,268,744	$11.926	$1,541,622	39,399	$23.94	$943,394	$0	$2,485,016
3		1"	19,397	$11.926	$231	12	$50.81	$610	$0	$841
4		1.5"	49,773	$11.926	$594	12	$94.08	$1,129	$0	$1,723
5		2"	147,696	$11.926	$1,761	12	$146.02	$1,704	$0	$3,465
6	Low Income									
7		5/8"	17,627,556	$11.926	$210,221	0	$24.84	$0	$0	$210,221
8		1"	2,645	$11.926	$32	0	$50.81	$0	$0	$32
9		1.5"	6,787	$11.926	$81	0	$94.08	$0	$0	$81
10		2"	20,140	$11.926	$240	0	$146.02	$0	$0	$240
11	Total Residential		147,142,738		$1,754,782	39,435		$946,836	$0	$2,701,618
12	Commercial									
13		5/8"	1,037,374	$10.985	$11,396	324	$23.94	$7,748	$0	$19,145
14		1"	117,413	$10.985	$1,290	48	$50.81	$2,427	$0	$3,716
15		1.5"	0	$10.985	$0		$94.08	$0	$0	$0
16		2"	857,527	$10.985	$9,420	24	$146.02	$3,456	$0	$12,877
17		6"	0	$0.000	$0	24	$166.00	$3,984	$0	$3,985
18	Total Commercial		2,012,314		$22,105	419		$17,615		$39,723
19	Flat	Fire Hydrant				744	$44.00	$32,736	$0	$32,736
20	Availability	All Others				4,483	$8.70	$39,002	$0	$39,002
21	Subtotal (Flat, Availability)		0		$0	5,227		$71,738	$0	$71,738
22	Total		149,155,052		$1,776,887	45,081		$1,036,189	$0	$2,813,079

23	**Revenue Neutral Check**			
24	Public Fire	744	$74.73	$55,599
25	6 Inch	24	$707.09	$16,970
26	Availability	4,483	$6.62	$29,664
27	Low-Income	17,657,128	($7.800)	($137,720)
28	Reductions to Monthly	39,723	$0.893	$35,487
29	Total Rate Structure Changes			$0

Supplement No. 27 to
Tariff Water-PA P.U.C. No.
5 Third Revised Page 17
Canceling First and Second Revised Page 17

PENNSYLVANIA-AMERICAN WATER COMPANY

SCHEDULE OF RATES

LOW-INCOME RIDER – ALL RATE ZONES
FOR QUALIFYING RESIDENTIAL CUSTOMERS

APPLICABILITY

This rider applies throughout the territories served under this tariff for service rendered on and after the Effective Date shown at the bottom of this page.

AVAILABILITY

This rider is available for a customer in the Residential Class that meets the low-income criteria of 150% based on the Federal Poverty Level. **(C)**

RATE

The rates for the service charge or minimum bill under this tariff will be 15% of the prevailing service charge or minimum bill in the rate zone where service is rendered.

The rate for water usage shall be billed at **90%** of the existing rates applicable to the rate zone **(D)** where service is rendered.

(C) means Change and (D) means Decrease

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
UFW

2018-2020

WATER USED OR LOST

(A) Line No.	(B) Date	(C) Subdivision	(D) Water Produced/Purchased	(E) WWTP	(F) Main Breaks/Leaks	(G) Flushing	(H) Adjustments	(I) Total Water Sold	(J) Unaccounted For Water	(K) Percent Unaccounted
1	Jan	WESTGATE	12,724,920	0	360,000	260,000	0	10,220,004	1,884,916	14.813%
2	Feb	WESTGATE	11,127,690	0	160,000	251,323	0	9,665,003	1,051,364	9.448%
3	Mar	WESTGATE	12,255,860	0	200,000	333,665	0	10,020,005	1,702,190	13.889%
4	Apr	WESTGATE	12,251,590	0	5,000	415,505	0	11,463,004	368,081	3.004%
5	May	WESTGATE	14,301,790	0	0	845,087	0	12,826,004	630,699	4.410%
6	Jun	WESTGATE	15,515,190	0	15,000	437,712	0	14,138,012	924,466	5.958%
7	Jul	WESTGATE	16,171,190	0	0	350,000	0	13,409,027	2,412,163	14.916%
8	Aug	WESTGATE	14,774,120	0	0	261,900	0	11,856,025	2,656,195	17.979%
9	Sep	WESTGATE	13,997,580	0	0	420,000	0	11,860,007	1,717,573	12.270%
10	Oct	WESTGATE	12,941,740	0	0	425,000	0	11,797,306	719,434	5.559%
11	Nov	WESTGATE	12,110,600	0	0	300,000	0	10,410,007	1,400,593	11.565%
12	Dec	WESTGATE	13,139,030	0	160,000	575,000	0	11,527,005	877,025	6.675%
13		**TOTAL**	161,311,300	0	900,000	4,875,192	0	139,191,409	16,344,699	**10.13%**

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
UFW

2018-2020

WATER USED OR LOST

(A) Line No.	(B) Date	(C) Subdivision	(D) Water Produced/Purchased	(E) WWTP	(F) Main Breaks/Leaks	(G) Flushing	(H) Adjustments	(I) Total Water Sold	(J) Unaccounted For Water	(K) Percent Unaccounted
1	Jan	PENN ESTATES	31,124,187	44,265	4,154,400	0	499,442	20,974,783	5,451,297	17.51%
2	Feb	PENN ESTATES	26,749,113	51,760	972,600	12,000	461,131	18,310,186	6,941,436	25.95%
3	Mar	PENN ESTATES	27,606,990	49,133	419,640	15,000	450,244	17,070,750	9,602,223	34.78%
4	Apr	PENN ESTATES	27,745,739	73,157	143,200	10,000	429,651	20,386,277	6,703,454	24.16%
5	May	PENN ESTATES	30,393,818	85,827	494,640	70,500	500,000	19,125,699	10,117,152	33.29%
6	Jun	PENN ESTATES	30,562,390	643,984	759,300	919,172	477,305	21,763,877	5,998,752	19.63%
7	Jul	PENN ESTATES	32,137,880	185,492	7,512,380	75,000	525,530	22,573,482	1,265,996	3.94%
8	Aug	PENN ESTATES	28,872,291	114,924	883,440	10,000	612,850	21,645,132	5,605,945	19.42%
9	Sep	PENN ESTATES	27,238,258	74,961	93,200	130,000	532,144	20,591,866	5,816,087	21.35%
10	Oct	PENN ESTATES	27,812,482	106,061	2,003,450	325,000	527,182	18,847,722	6,003,067	21.58%
11	Nov	PENN ESTATES	25,957,397	93,692	200,000	370,000	550,182	19,167,440	5,576,083	21.48%
12	Dec	PENN ESTATES	28,264,329	205,600	938,800	0	486,061	20,108,116	6,525,752	23.09%
13		**TOTAL**	344,464,874	1,728,856	18,575,050	1,936,672	6,051,722	240,565,330	75,607,244	**21.95%**

Community Utilities of Pennsylvania, Inc.
Water Divisions
R-2021-3025206
UFW

Purchased Tamiment 8/14/2019

2018-2020

WATER USED OR LOST

(A) Line No.	(B) Date	(C) Subdivision	(D) Water Produced/Purchased	(E) WWTP	(F) Main Breaks/Leaks	(G) Flushing	(H) Adjustments	(I) Total Water Sold	(J) Unaccounted For Water	(K) Percent Unaccounted
1	Jan	TAMIMENT	0	0	0	0	0	0	0	0.00%
2	Feb	TAMIMENT	0	0	0	0	0	0	0	0.00%
3	Mar	TAMIMENT	10,495,690	7,713	0	0	0	5,051,800	5,436,177	51.79%
4	Apr	TAMIMENT	0	0	0	0	0	0	0	0.00%
5	May	TAMIMENT	0	0	0	0	0	0	0	0.00%
6	Jun	TAMIMENT	11,034,620	14,778	0	0	12,500	4,452,100	6,555,242	59.41%
7	Jul	TAMIMENT	0	0	0	0	0	0	0	0.00%
8	Aug	TAMIMENT	0	0	0	0	0	0	0	0.00%
9	Sep	TAMIMENT	17,167,400	15,300	750,000	200,000	0	5,410,939	10,791,161	62.86%
10	Oct	TAMIMENT	0	0	0	0	0	0	0	0.00%
11	Nov	TAMIMENT	0	0	0	0	0	0	0	0.00%
12	Dec	TAMIMENT	20,835,750	6,931	0	0	0	9,072,294	11,756,525	56.42%
13		**TOTAL**	59,533,460	44,722	750,000	200,000	12,500	23,987,133	34,539,105	**58.02%**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025206
Community Utilities of Pennsylvania Inc.	:	
Water Division	:	

VERIFICATION OF THE
BUREAU OF INVESTIGATION AND ENFORCEMENT

I, Esyan A. Sakaya, on behalf of the Bureau of Investigation and Enforcement, hereby verify that the documents preliminarily identified as I&E Statement No. 3, I&E Exhibit No. 3, and I&E Statement No. 3-SR were prepared by me or under my direct supervision and control. Furthermore, the facts contained therein are true and correct to the best of my knowledge, information and belief and I expect to be able to prove the same at an Evidentiary Hearing in this matter. This Verification is made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

_/s/ Esyan A. Sakaya_____
Esyan A. Sakaya
Fixed Utility Valuation Engineer
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Dated: September 7, 2021

OCA STATEMENT 1

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
v.	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
and	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

DIRECT TESTIMONY

OF

STACY L. SHERWOOD

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

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APPENDIX A: Resume of Stacy L. Sherwood
APPENDIX B: Schedules SLS-1 through SLS-14

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Stacy L. Sherwood. I am an Economist with Exeter Associates, Inc. ("Exeter"). Our offices are located at 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter is a firm of consulting economists specializing in issues pertaining to public utilities.

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS, WORK EXPERIENCE, AND EDUCATIONAL BACKGROUND.

A. I have over 12 years of experience in the energy sector, related specifically to the review and development of energy efficiency and demand response programs and policies for the use of advanced technologies for pollution prevention and energy efficiency. With Exeter, I have provided technical support and analysis to state and federal clients on energy efficiency, distributed resources, demand response, and renewable energy. I have also participated in water rate cases in Rhode Island, Pennsylvania, and New Jersey and wastewater cases in Pennsylvania. I hold a Bachelor's Degree in Accounting, Business, and Economics from McDaniel College. My resume is provided in Appendix A.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY PROCEEDINGS ON UTILITY ISSUES?

A. Yes. I have testified on a range of issues including revenue requirement and adequacy of service for electric, natural gas, water, and wastewater utility services, energy efficiency programs, and automated metering infrastructure. I have testified before the Maryland Public Service Commission, Pennsylvania Public Utility Commission, and

Rhode Island Public Utility Commission. My resume, provided in Appendix A, has further details on my experience in testifying.

Q. ON WHOSE BEHALF ARE YOU APPEARING**?**

A. I am presenting testimony on behalf of the Pennsylvania Office of Consumer Advocate ("OCA").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. Exeter was retained by the OCA to assist in the evaluation of the water and wastewater rate filings submitted by Community Utilities of Pennsylvania Inc. ("CUPA" or "Company") to the Pennsylvania Public Utility Commission ("PA PUC" or "Commission") on April 14, 2021. This testimony presents my findings and recommendations with regard to the overall revenue increase that CUPA has supported. In addition, I discuss other factors the Commission should consider when evaluating whether and how much of a rate increase is reasonable at this time.

OCA witness Noah D. Eastman will address the Company's rate of return in OCA Statement 2. OCA witness Jerome D. Mierzwa will address CUPA's Cost of Service studies and rate design proposals in OCA Statement 3. OCA witness Terry L. Fought will address issues related to the quality of service provided by the Company in OCA Statement 4.

Q. HAVE YOU PREPARED SCHEDULES TO ACCOMPANY YOUR TESTIMONY?

A. Yes. I have prepared Schedules SLS-1 through SLS-14. Schedule SLS-1 provides a summary of my recommended total water revenue requirement, SLS-2 provides a summary of my recommended water adjustments, and SLS-3 provides the water rate base. Schedule SLS-4 provides a summary of my recommended total wastewater revenue requirement, SLS-5 provides a summary of my recommended wastewater

adjustments, and SLS-6 provides the wastewater rate base. Schedules SLS-7 through SLS-14 detail my individual recommended adjustments for both water and wastewater. The schedules are provided in Appendix B.

Q. WHAT TIME PERIODS HAVE YOU UTILIZED IN MAKING YOUR DETERMINATION OF CUPA'S REVENUE REQUIREMENTS?

A. Consistent with the CUPA filings, I have utilized a historical test year ("HTY") that corresponds to the year ended December 31, 2020; a future test year ("FTY") that corresponds to the year ending December 31, 2021; and a fully projected future test year ("FPFTY") that corresponds to the year ending December 31, 2022 as the basis for determining CUPA's revenue requirements and the revenue increase necessary to recover those requirements.

Q. WHAT IS YOUR RECOMMENDATION WITH REGARD TO REVENUE REQUIREMENT IN THIS PROCEEDING?

A. I have calculated the revenue increases for water and wastewater separately. Considering my adjustments to the Company's water claims, as discussed below, and applying an overall cost of capital of 7.10 percent (calculated by OCA rate of return witness Noah Eastman in OCA Statement 2), I have calculated the overall water revenue requirement increase to be $547,120 in this proceeding. That recommendation is $215,139 less than the increase of $762,259 that CUPA has requested for water in this case.

Considering my adjustments to the Company's wastewater claims, as discussed below, and applying an overall cost of capital of 7.10 percent (calculated by OCA witness Eastman in OCA Statement 2), I have calculated the overall wastewater revenue requirement increase to be $645,820 in this proceeding. That recommendation

is $353,655 less than the increase of $999,475 that CUPA has requested for wastewater in this case.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. In the remainder of my testimony, I discuss the reasonableness of a rate increase at this time and I document and explain each of the nine revenue requirement adjustments I am recommending that the Commission approve. My discussion of these adjustments is organized into sections corresponding to the issue being addressed.

II. REASONABLENESS OF INCREASING RATES AT THIS TIME

Q. DO YOU BELIEVE THE TIMING OF THIS RATE INCREASE MAY NEGATIVELY IMPACT CUSTOMERS, MORE SO THAN IN OTHER TIMES?

A. Yes. In March 2020, the Coronavirus ("COVID-19") began negatively impacting the U.S. economy resulting in significant levels of unemployment and a constrained housing market, which exacerbated affordability issues. As a result of the COVID-19 pandemic, the federal government offered numerous stimulus packages in 2020 and early 2021 to individuals and businesses.[1] Additionally, the federal and some state governments instituted moratoriums on evictions, foreclosures, and utility shutoffs.[2,3] While the magnitude of the financial and economic impacts has lessened since March 2020, the issue of utility affordability continues to impact Americans, including those not previously qualified as low-income, and the negative impacts on the economy continue. Pennsylvanians have not been spared from the impacts of this pandemic, with

[1] https://home.treasury.gov/policy-issues/coronavirus.
[2] https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/24/fact-sheet-biden-harris-administration-announces-initiatives-to-promote-housing-stability-by-supporting-vulnerable-tenants-and-preventing-foreclosures/.
[3] Pennsylvania PUC Docket No. M-2020-3019244, Emergency Order (March 13, 2020).

unemployment rates ranging from 16.2 percent in April 2020 to 6.9 percent in June 2021.[4] It is unclear how long the impacts of COVID-19 will be felt on the economy at this time and how long it may take for individuals to recover.

Q. ARE OTHERS CONCERNED ABOUT CUPA'S PROPOSED INCREASES?

A. Yes. At the June 29, 2021 Public Input Hearing in this proceeding, many CUPA customers and three state representatives raised concerns regarding affordability of rate increases at this time. In particular, Pennsylvania Representatives Christina Sappey, Rosemary Brown, and Maureen Madden, expressed concerns for their respective constituents who have indicated that the rate increase would negatively impact the economically insecure, especially those such as seniors on fixed income or people and families impacted by COVID-19. (Tr. 36-38, 42-45). Furthermore, Representative Madden indicated that her constituents don't "feel like they're getting any upgraded quality of their water for the constant increase in their water and wastewater services" (Tr. 46).

Q. DID ANY RATEPAYERS ECHO THE CONCERNS OF THE REPRESENTATIVES?

A. Yes. Numerous ratepayers indicated that they would have difficulty paying the proposed increase (Tr. 85, 116-117, 121, 136, 148, 225, and 236), fixed income customers, as well as other customers, indicated that the increases sought by CUPA exceed cost of living adjustments (Tr. 48, 71, 85, 105, 145, 147-148, 163, and 195), and that rates continue to increase every two years, regardless of conservation efforts and without any improvement in service (Tr. 96, 102-103, 134, 141-143, 173, 175, 188). Ratepayers also indicated that the requested increases during a time when the

[4] https://www.bls.gov/regions/mid-atlantic/pennsylvania.htm#eag

economic impacts of COVID-19 are still being felt will negatively impact households (Tr. 50, 105, 108, 130, 202, 236, and 240).

Q. WERE CONCERNS OTHER THAN AFFORDABILITY RAISED DURING THE PUBLIC HEARING?

A. Yes. Ratepayers indicated that CUPA is poor at communicating to customers. Per one ratepayer, the water system was contaminated on June 28, 2019 and they were not notified of the contamination until July 17th (Tr. 103-104). Other customers testified about delayed or confusing notices. (Tr. 45-46, 135-137, 141). One ratepayer said "First you tell me to boil water. Then you tell me don't drink the water so I have to buy cases of bottled water." (Tr. 137). Another ratepayer indicated that their water bill was around $900 and no one of the Company flagged the bill as high use (Tr. 201). Customers also indicated that it is difficult to reach someone at CUPA to ask about issues. (Tr. 74-7, 137, 191).

Q. HOW SHOULD THE COMPANY ADDRESS THESE CONCERNS ABOUT SERVICE?

A. CUPA should make changes to ensure that customers can easily reach the Company and get answers to their questions by phone. Additional concerns raised during the Public Input Hearing are addressed by OCA witness Fought in OCA Statement 4.

Q. WHAT SHOULD THE COMMISSION CONSIDER WHEN EVALUATING THE REASONABLENESS OF THE RATES PRODUCED IN SETTING THE REVENUE REQUIREMENTS IN THIS PROCEEDING?

A. In determining an appropriate revenue requirement, consideration should be given to whether the revenues produce rates that are just and reasonable, not only from the Company's perspective, but also from the ratepayers' perspective. In this case, there are three issues to consider in determining just and reasonable rates: affordability,

gradualism/rate shock, and adequacy of service. Each of these components is important in determining reasonable rates in this case.

As discussed above, many customers testified in this proceeding that proposed rates – and even current rates – are not affordable. The Commission should consider the impacts of the COVID-19 pandemic when reaching its decision as to whether any increase should be authorized for CUPA in this proceeding. Any rate increase at this time may worsen hardships, including intensifying arrearages.[5]

CUPA has proposed to increase average water and wastewater bills for some of its customers by 76 percent and 100 percent, respectively. As subsequently explained by OCA witness Mierzwa in OCA Statement 3, increasing rates as the Company has proposed will result in rate shock that violates the important ratemaking principle of gradualism. However, even if the rate shock issue were mitigated through a phased-in increase, for example, it may not be affordable for some customers.

Many customers raised concerns about CUPA's service. For purposes of determining just and reasonable rates, the adequacy of service should be considered in setting the fair rate of return. In no case should the fair rate of return be higher than the 9.34 percent cost of equity recommended by OCA witness Eastman.

III. RATE BASE

Q. DO YOU HAVE ANY PROPOSED ADJUSTMENTS TO RATE BASE?

A. Yes. CUPA included several adjustments to plant additions based upon historical average level of annual spending, rather than on specific projects. There are not designated start or completion dates for the proposed plant additions. Given the current economic climate, I recommend that only projects with definitive start and completion

[5] CUPA's uncollectible accounts increased 473 percent in 2020 compared to the average in the 4 years 2016-2019. CUPA Response to OCA-II-12.

dates within the test period be included as plant additions. As a result, the following plant additions were removed from wastewater:

- Treatment and Disposal Equipment FTY: $431,366 ($152,611 allocated for Penn Estates Consent Order Agreement Upgrades was not removed from plant additions);
- Treatment and Disposal Equipment FPFTY: $449,899;
- Structural Improvement and Collection Equipment FTY: $108;
- Structural Improvement and Collection Equipment FPFTY: $113;
- Power Generation Equipment FTY: $699;
- Power Generation Equipment FPFTY: $104,741; and
- Other Plant Tangibles FTY: $858.

The total adjustment to plant additions for wastewater is $987,784 and is reflected on Schedule SLS-6. As a result of the adjustment to plant additions, there is also a corresponding adjustment made to depreciation expense on Schedule SLS-4 and accumulated depreciation on Schedule SLS-6. My recommended adjustment to depreciation expense is $23,640 and my recommended adjustment to accumulated depreciation is $34,458. The accumulated depreciation adjustment is larger to reflect the adjustment for the FTY and the FPFTY, while the depreciation adjustment is only for the FPFTY. This was determined by utilizing the depreciation rates provided in the Company's response to I&E-RB-1. The following depreciation rates were used, based upon the plant equipment:

- Treatment and Disposal Equipment and Other Plant Tangibles: 2.5%;
- Structural Improvement and Collection Equipment: 2.2%; and
- Power Generation Equipment: 1.5%.

IV. SALARIES

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE COMPANY'S SALARY EXPENSE.

A. When determining a revenue requirement for the FPFTY, expenses should be adjusted for known and measurable costs. Costs such as standard salary increases and a position vacancy that is expected to be filled can be included as part of the adjustment to the HTY and FTY to determine the FPFTY expense. However, the addition of positions and increases based on merit, promotions or a manager's discretion are not known and measurable. Additionally, since its last rate case, CUPA has increased its annual salary increase from 3 percent to 4 percent. However, as the Company was unable to produce evidence of this policy change, I have maintained the 3 percent annual salary increase utilized in the Company's prior rate case. Maintaining the historic, 3 percent across-the-board increase is also reasonable given the continued financial hardships as a result of the COVID-19 pandemic, discussed above. Furthermore, I have removed any projected annual increases to vacant positions, as they are not currently filled and will not receive increases until they are filled. To reflect this change, I adjusted the salary expense from the FTY to reflect a 3 percent salary increase, except in cases where there is a position vacancy and in such cases I have subsequently adjusted the Pension benefits accordingly. I utilized the FTY, as those salaries are already in effect and thus are known and measurable.

In total, I recommend that the FPFTY salary expense be adjusted by $118,594. As a result of the adjustment to salary expense, I recommend an adjustment to increase payroll taxes by $1,381 and decrease employee pension and benefits by $13,886. Based upon the Company's allocation, I adjusted water by decreasing salary expense by $54,304, decreasing employee pension and benefits by $6,359, and increasing the payroll tax expense by $632. I adjusted wastewater by reducing salary expense by $64,290, reduced employee pension and benefits by $7,528, and increased payroll taxes by $749. These adjustments are reflected on Schedule SLS-7.

V. CHEMICAL

Q. WHAT IS THE COMPANY'S REQUESTED CHEMICAL EXPENSE FOR FPFTY?

A. The Company projected that in the FPFTY the total chemical costs for both water and wastewater services will be $243,104. Based upon the Company's equivalent residential customer (ERC) allocation, $113,899 is allocated to water services and $129,205 is allocated to wastewater services.

Q. DO YOU AGREE WITH THE COMPANY'S FORECAST FOR CHEMICAL EXPENSE?

A. No. First, CUPA is projecting to increase its chemical expense between the HTY and FPFTY by 45 percent; however, the Company does not identify any increases in any particular chemical from prior years or state why additional chemicals will be needed beyond citing the acquisition of Tamiment in 2019. Second, after reviewing the projected monthly expenses for chemicals as projected by the Company, the purchases are projected to be more frequent and larger than they historically have been, even when including the HTY which reflects an entire year of operation with Tamiment. No information has been provided by the Company to support larger purchases of chemicals during the FPFTY. Based on the fluctuations in usage from year to year, I recommend that a three-year normalization be used to project the total chemical expense that is allocated between water and wastewater services. I do not see an issue with using an average expense, despite the addition of Tamiment, as the purchase of chemicals in the HTY (2020) was lower than in 2019.

Q. WHAT IS YOUR ADJUSTMENT TO THE CHEMICAL EXPENSES ALLOCATED TO WATER AND WASTEWATER?

A. Using a three-year average and the Company's ERC percentages provided in response to OCA-II-8, I recommend reducing the chemical expense allocated to water by $42,352 and reducing the amount allocated to wastewater by $70,266. The calculation of the adjustment is provided on Schedule SLS-8.

VI. ENGINEERING FEES

Q. WHAT IS THE COMPANY'S FORECASTED ENGINEERING FEE EXPENSE IN THE FPFTY?

A. The Company projected that in the FPFTY the total engineering fee expense for both water and wastewater services will be $21,737. Based upon the Company's ERC allocation, $9,953 is allocated to water services and $11,784 is allocated to wastewater services.

Q. DO YOU AGREE WITH THE COMPANY'S PROJECTED ENGINEERING FEE EXPENSE?

A. No, I do not. The HTY expenses includes irregular expenses that are not incurred on an annual basis, such as permit negotiations and renewals for permits obtained approximately every five years. Based on my review of the general ledger for 2018 through 2020, I determined that $31,528 of the $44,372 in HTY engineering fee expenses are not incurred on an annual basis and should be normalized. With the normalized level of expense for the HTY removed, I then averaged the remaining engineering fee expense for 2018 through 2020 and determined it to be $8,755. I then added this to the 5-year normalized engineering expense of $6,306, to match the permit cycle. The sum, $15,060, is more representative of the projected engineering fee expense, based on historical expenses, than the Company's projection.

Q. WHAT IS YOUR ADJUSTMENT TO THE ENGINEERING FEE EXPENSE?

A. Based upon my recommended level of $15,060 for the engineering fee expense, I recommend a $6,677 reduction to the Company's claim. Using the Company's ERC percentages to allocate the total FPFTY engineering fee expense reduction, $3,057 would be allocated to water services and the remainder, $3,620, would be allocated to wastewater services. This adjustment is reflected on Schedule SLS-9.

VII. TESTING, METER READING, AND MISCELLANEOUS EXPENSE

Q. WHAT IS THE COMPANY'S FORECASTED TESTING, METER READING, AND MISCELLANEOUS EXPENSE IN THE FPFTY?

A. The Company projected that in the FPFTY the total testing, meter reading, and miscellaneous expense for both water and wastewater services will be $108,646. Based upon the Company's ERC allocation and allocation of company-specific costs, $43,343 is allocated to water services and $65,303 is allocated to wastewater services.[6]

Q. DO YOU AGREE WITH THE COMPANY'S PROJECTED EXPENSE?

A. No, I do not. The individual expenses within the testing, meter reading, and miscellaneous expense account appear to be overstated in comparison to historical costs. Overall, in the HTY, the expense was $83,114 and the Company is seeking to increase the expense by $25,532 by the FPFTY.

The Company cites in response to I&E-RE-19-D that the main driver of the variances is related to the acquisition of Tamiment in 2019; however, the HTY should have captured the expenses related to Tamiment, as the Company had a full operating

[6] Per the Company's response to I&E-RE-19-C, CUPA allocated meter reading, water and safe drinking water test expenses to water only and testing for sewer to wastewater. Otherwise, the costs are allocated based upon the ERC.

year post-acquisition. An example of this is the Test – Sewer expense in the HTY which was $12,201; however, in the FPFTY, the Company projects the expenses to be $43,519. After reviewing individual cost categories within the expense, I recommend utilizing the historical three-year average to project this account for the FPFTY. If the Company has specific support for individual increases, it has not provided that support.

Q. WHAT IS YOUR ADJUSTMENT TO THE TESTING, METER READING, AND MISCELLANEOUS EXPENSE?

A. Based upon my recommendation to use the three-year average, I recommend that the testing, meter reading and miscellaneous expense level for the FPFTY be $96,954, which is $11,692 less than the Company's claim. I used the three-year average of water and wastewater expenses, individually, to determine my recommendation for the FPFTY to allow for company-specific costs to be allocated correctly. Therefore, for the FPFTY, I recommend allocating $49,838 to water services and allocating the remainder, $46,752, to wastewater services. This adjustment is reflected on Schedule SLS-10.

VIII. MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE

Q. WHAT IS THE COMPANY'S FORECASTED MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE IN THE FPFTY?

A. The Company projected that in the FPFTY the total materials, supplies, and other maintenance expense for both water and wastewater services will be $251,500. Based upon the Company's ERC allocation, $116,943 is allocated to water services and $134,556 is allocated to wastewater services.

Q. DO YOU AGREE WITH THE COMPANY'S PROJECTED EXPENSE?

A. While I do not oppose the Company's claim, when reviewing the support for the claim in the Company's response to I&E-RE-13-C, I was unable to confirm the amount claimed. The response to I&E-RE-13-C identifies a total of $221,091 in expenses for the FPFTY. That amount excludes sludge hauling as that is a separate expense, which has already been accounted for. If the Company is able to provide evidence that the sludge hauling is not double counted to support its original claim of $251,000, I do not oppose including the entire claim; however, until then I will use the support provided in the interrogatory response identified above to determine the expense for the FPFTY.

Q. WHAT IS YOUR ADJUSTMENT TO THE MATERIALS, SUPPLIES, AND MAINTENANCE EXPENSE?

A. Based upon my recommendation, the materials, supplies, and maintenance expense should be $221,091, which is $30,409 less than the Company's claim. Using the Company's allocation in I&E-RE-13-C, $116,994 should be allocated to water services and the remainder, $104,147, should be allocated to wastewater services (see Schedule SLS-4). As a result, this expense is only adjusted for wastewater as the water operations reflects the proper allocation.

IX. TAXES AND TAXES OTHER THAN INCOME

Q. AS THE RESULT OF YOUR RECOMMENDED CHANGES WERE TAXES AND TAXES OTHER THAN INCOME IMPACTED?

A. Yes. Taxes are dependent upon revenue, and taxes other than income are dependent upon revenue, plant in service, and payroll taxes. Since these are factors for which I recommended adjustments, I have adjusted both taxes and taxes other than income. These adjustments are shown on Schedules SLS-11 and SLS-14. These two expenses should be altered, depending upon which recommendations the Commission adopts.

X. CASH WORKING CAPITAL

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE COMPANY'S CLAIM FOR CASH WORKING CAPITAL.

A. The Company calculated its cash working capital based upon 12.5 percent, or one-eighth of the operations and maintenance ("O&M") expense and taxes other than income. I adopt this methodology, except that, as shown on Schedule SLS-12, I have adjusted the cash working capital to $190,008 for water and $213,932 for wastewater, accounting for my recommended adjusted O&M expenses. This adjustment should be modified to reflect the total adjustments to O&M and taxes as accepted by the Commission.

XI. ALLOWANCE FOR UNCOLLECTIBLE ACCOUNTS

Q. WHAT IS THE ADJUSTMENT YOU ARE PROPOSING TO THE ALLOWANCE FOR UNCOLLECTIBLE ACCOUNTS?

A. I calculated the allowance for uncollectible accounts by multiplying the proposed revenue calculated in SLS-1 by CUPA's proposed percent of uncollectible revenue of 0.73 percent. Using this calculation, I adjusted the allowance to $19,369 for water and $24,223 for wastewater. This adjustment is reflected on Schedule SLS-13.

XII. RATE CASE EXPENSE

Q. DO YOU AGREE WITH THE COMPANY'S POSITION TO AMORTIZE THE RATE CASE EXPENSE?

A. No, I do not. Since the rate case expense is ongoing and occurs at irregular intervals, the expense should be normalized instead of amortized. There is Commission precedent supporting the normalization of rate case expense over the average timeframe

that the utility has historically filed rate cases. In CUPA's case that is 4.6 years, so I will accept the 4-year period that CUPA utilized. As I do not recommend an adjustment to the period, my recommendation does not result in an adjustment to CUPA's proposed rate case expense. That said, the Commission should require CUPA to normalize the rate case expense instead of amortize it.

Q. WHAT LEVEL OF EXPENSE DO YOU RECOMMEND BE NORMALIZED FOR RATE CASE EXPENSE?

A. I recommend that CUPA should update its rate case expense to reflect actual rate case expense to date and its projection for rate case expenses through the end of the proceeding as part of its rejoinder testimony, so that the final amount to be normalized will reflect primarily actual expenses rather than projected expenses.

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does. I reserve the right to supplement this testimony as appropriate.

APPENDIX A

Resume of Stacy L. Sherwood

STACY L. SHERWOOD

Ms. Sherwood is an Economist at Exeter Associates, Inc. At Exeter, Ms. Sherwood develops utility service assessments, provides bill and rate analysis, and assesses and evaluates the effectiveness of energy conservation and efficiency programs and smart meter implementation plans. She also conducts analysis on renewable energy initiatives and life-cycle cost analysis of renewable energy projects. Prior to joining Exeter, Ms. Sherwood worked on energy efficiency with the State of Maryland.

Education

B.A. (Economics, Business, and Accounting) – McDaniel College, 2009

Previous Employment

2013-2015	Assistant Director Maryland Public Service Commission Baltimore, Maryland
2011-2013	Regulatory Economist II Maryland Public Service Commission Baltimore, Maryland
2009-2011	Regulatory Economist I Maryland Public Service Commission Baltimore, Maryland

Professional Experience

Ms. Sherwood's work at Exeter is primarily related to energy efficiency, renewable energy, automated metering infrastructure, cost recovery, and revenue requirements. Ms. Sherwood has successfully worked with utilities, state energy offices, attorney general's offices, consumer advocates, and commission staffs. Ms. Sherwood provides ongoing support to the Arkansas Office of the Attorney General and the Pennsylvania Office of Consumer Advocates regarding their respective states' utility energy efficiency programs, including analysis of utility energy efficiency plans and proposed plan amendments; analysis of issues raised during stakeholder meetings; review of riders and surcharges related to cost-recovery; and provide recommendations on technical and policy-related matters. She has contributed to several publications issued by the Maryland Power Plant Research Program regarding electricity in Maryland, including load forecasting, analysis of policy impacts, and inclusion of renewable resources. Additionally, Ms. Sherwood has worked with the Department of Defense to study the demand response potential at various Army Garrisons throughout the United States by conducting on-site visits and performing analysis of electric bills.

At the Maryland Public Service Commission, Ms. Sherwood performed analysis on the EmPOWER Maryland energy efficiency and demand response programs, the Exelon Customer Investment Fund, and served as lead analyst for the EmPOWER Maryland limited income programs implemented by the Maryland Department of Housing and Community Development. For those initiatives, she developed reporting templates and guidelines; oversaw evaluation, measurement, and verification of program results; and recommended and ensured compliance with policies. Additionally, Ms. Sherwood assisted with the development of regulations proposed before the Commission to implement the 2013 Maryland Offshore Wind Energy Act.

Publications and Consulting Reports

Fort Riley Assessment of Utility Contracts and Costs, on behalf of the U.S. Army Installation Management Command and Army Commercial Utilities Program, April 2019 (with Steven Estomin of Exeter Associates, Inc.).

Sierra Army Depot Assessment of Utility Contracts and Costs, on behalf of the U.S. Army Installation Management Command and Army Commercial Utilities Program, March 2019 (with Steven Estomin of Exeter Associates, Inc.).

Fort Riley Assessment of Demand Response Opportunities, on behalf of the U.S. Army Office Chief of Staff for Installation Management, January 2018 (with Christina Mudd of Exeter Associates, Inc. and Jim Clark of Clark Energy, Inc.).

Fort Gordon Assessment of Demand Response Opportunities, on behalf of the U.S. Army Office Chief of Staff for Installation Management, June 2017 (with Christina Mudd of Exeter Associates, Inc. and Jim Clark of Clark Energy, Inc.).

Cumulative Environmental Impact Report, on behalf of the Power Plant Research Program, Maryland Department of Natural Resources, December 2016 (with Steven Estomin, Kevin Porter, Rebecca Widiss, and Nicholas DiSanti of Exeter Associates, Inc.; Environmental Resources Management, Inc.; Versar, Inc.; Metametrics, Inc.; Spectrum Environmental Services, Inc.; and RGM Incorporated).

Long-Term Electricity Report for Maryland, on behalf of the Power Plant Research Program, Maryland Department of Natural Resources, December 2016 (with Steven Estomin, Kevin Porter, Rebecca Widiss, Nicholas DiSanti, Cali Clark, and Laura Miller of Exeter Associates, Inc.).

Fort Stewart Assessment of Demand Response Opportunities, on behalf of the U.S. Army Office Chief of Staff for Installation Management, September 2016 (with Christina Mudd and Felipe Salcedo of Exeter Associates, Inc. and Jim Clark of Clark Energy, Inc.).

Edwards Air Force Base Feasibility of a Geothermal Project, on behalf of the U.S. Air Force Civil Engineer Center, April 2016 (with Christina Mudd and Kevin Porter of Exeter Associates, Inc.).

Expert Testimony

Before the Louisiana Public Service Commission, Docket No. U-35877 Pointe Coupee Electric Membership Corporation *Application to Acquire and Install an Automated Metering System and Request for Cost Recovery and Related Relief,* February 2021, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020818, *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020830, *Petition of PECO Energy Company for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020824, *Petition of PPL Electric Utilities for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Louisiana Public Service Commission, Docket No. U-35707 Southwest Louisiana Electric Membership Corporation *Application for Approval to Acquire and Install an Automated Metering System and Request for Cost Recovery and Related Relief,* December 2020, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3020919 *Pennsylvania Public Utility Commission v. Audubon Water Company*, November 2020, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3020256
Pennsylvania Public Utility Commission v. City of Bethlehem – Water Department, November 2020, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Louisiana Public Service Commission, Docket No. U-35456 Concordia Electric Cooperative Inc. *Application for Certification of a Replacement Advanced Metering System and Approval of Related Financing*, November 2020, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3019612
Pennsylvania Public Utility Commission v. Reynolds Disposal Company, October 2020, for the Pennsylvania Office of Consumer Advocate. Participated in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3010955
Pennsylvania Public Utility Commission v. City of Lancaster – Sewer Fund, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008208
Pennsylvania Public Utility Commission v. Wellsboro Electric Company, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008209
Pennsylvania Public Utility Commission v. Valley Energy, Inc, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008212,
Pennsylvania Public Utility Commission v. Citizens' Electric Company of Lewisburg, PA, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3009559,
Pennsylvania Public Utility Commission v. Eaton Sewer & Water Company, Inc. – Wastewater Division, August 2019, for the Pennsylvania Office of Consumer Advocate. Participate in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3009567,
Pennsylvania Public Utility Commission v. Eaton Sewer & Water Company, Inc. – Water Division, August 2019, for the Pennsylvania Office of Consumer Advocate. Participate in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008947, *Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Division*, July 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008948, *Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Division*, July 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3006904, *Pennsylvania Public Utility Commission v. The Newtown Artesian Water Company (Supplement No. 136 to Tariff Water – Pa. P.U.C. No. 9)*, March 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3006814, *Pennsylvania Public Utility Commission v. UGI Utilities, Inc – Gas Division (Utility Code 123100, Filed Tariff Gas- Pa. P.U.C. Nos. 7 and 7S)*, January 2019, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of its proposed consolidated natural gas energy efficiency plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2018-3004144, *Petition of UGI Utilities, Inc. – Electric Division for Approval of Phase III of its Energy Efficiency and Conservation Plan*, August 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of proposed Plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3001307, *Pennsylvania Public Utility Commission v. Hidden Valley Utility Services, L.P. – Wastewater (General Rate Increase Filed Pursuant to 66 PS. CS 1308, Including Answers to 52 PA. Code 53.52)*, April 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3001306, *Pennsylvania Public Utility Commission v. Hidden Valley Utility Services, L.P. – Water (General Rate Increase Filed Pursuant to 66 PS. CS 1308, Including Answers to 52 PA. Code 53.52)*, April 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. P-2015-2497267, *Petition of Duquesne Light Company for Approval of its Smart Meter Procurement and Installation Plan*, February 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the inclusion of additional costs related to the Plan's implementation.

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2477174, *Petition of UGI Utilities, Inc. – Electric Division for Approval of Phase II of its Energy Efficiency and Conservation Plan*, February 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of proposed Plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2515642, *Petition of PPL Electric Utilities for Approval of its Energy Efficiency and Conservation Phase II Plan*, January 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2515375, *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation Phase II Plan*, January 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Public Utilities Commission of Rhode Island, Docket No. 4595, *Newport Water Division – Rate Application to Collect Additional Revenues of $1,304,595 for a Total Cost of Service of $20,151,440*, December 2015, on behalf of the Division of Public Utilities and Carriers. Testified regarding reasonableness of the overall rate revenue increase.

Before the Maryland Public Service Commission, Case No. 9311, *In the Matter of the Application of Potomac Electric Power Company for an Increase in its Retail Rates For the Distribution of Electric Energy*, April 2013, on behalf of the Maryland Public Service Commission Staff. Testified regarding the inclusion of advanced metering infrastructure meters and energy advisor and engineer positions in rates.

APPENDIX B

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
	)	
v.	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
	)	
and	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

SCHEDULES ACCOMPANYING THE

DIRECT TESTIMONY

OF

STACY L. SHERWOOD

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Volumetric Revenue					
3	Residential	$ 1,312,552		$ 1,312,552		$ 1,312,552
4	Commercial	18,296		18,296		18,296
5	Flat/Base Rate Revenue					
6	Residential	687,585		687,585		687,585
7	Commercial	17,562		17,562		17,562
8	Availability	35,394		35,394		35,394
9	Fire Hydrant	24,831		24,831		24,831
10	Other Operating Revenues					
11	Forfeited Discounts	(1,407)	$ 7,544	6,137		6,137
12	Miscellaneous Service Revenues	4,905	(1,095)	3,810		3,810
13	Purchased Services	-	-	-		-
14	Accruals	(56,290)	56,290	-		-
15	Gross Operating Revenues	2,043,428		2,106,167	547,120	2,653,287
16	Allowance for Uncollectible Accounts	(17,369) (1)		(17,369)	(2,204)	(19,573)
17	Net Operating Revenues	$ 2,026,059	$ 62,739	$ 2,088,798	$ 549,324	$ 2,638,122
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	396,201	(54,304)	341,897		341,897
21	Employee Pensions & Benefits	111,990	(6,359)	105,631		105,631
22	Purchased Power	106,110		106,110		106,110
23	Purchased Water	217,663		217,663		217,663
24	Chemicals	113,899	(42,352)	71,547		71,547
25	Materials, Supplier, and Other Maintenance Expenses	116,943		116,943		116,943
26	Engineering Fees	9,953	(3,057)	6,896		6,896
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	3,815		3,815		3,815
29	Contractual Services - Other	272,323		272,323		272,323
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	22,580		22,580		22,580
32	Insurance - Other	50,734		50,734		50,734
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	45,196		45,196		45,196
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	36,709		36,709		36,709
36	Regulatory Commission Expenses - Other	-		-		-
37	Testing, Meter Reading, and Miscellaneous Expenses	43,343	6,495	49,838		49,838
38	Total Operating Revenue Deductions	$ 1,547,459		$ 1,447,883		$ 1,447,883
39						
40	Operating Income Before Income Taxes	478,600		640,915		1,190,239
41						
42	Operating Expenses					
43	Depreciation	375,543		375,543		375,543
44	Amortization of CIAC	(30,502)		(30,502)		(30,502)
45	Amortization of PAA	(36,069)		(36,069)		(36,069)
46	Taxes Other than Income	79,357	(7,177)	72,180		72,180
47		388,329		381,152		381,152
48	Income Taxes					
49	Federal Income Tax	119,283	(11,799)	107,484		107,484
50	State Income Tax	63,043	(6,236)	56,807		56,807
51		182,326		164,291		164,291
52						
53	Net Operating Income	$ (92,055)	$ (62,049)	$ 95,472	$ 549,324	$ 644,796
54						
55	Rate Base	$ 9,093,162	(11,532)	$ 9,081,630		$ 9,081,630
56						
57	Return On Rate Base	-1.01%		1.05%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	
1	Rate Base	$ 9,081,630	(1)
2	Required Rate of Return	7.10%	(2)
3			
4	Net Operating Income Required	$ 644,796	
5	Net Operating Income at Present Rates	97,676	
6			
7	Required Change in Company Revenue	$ 547,120	

Notes:

(1) Schedule SLS-3
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,088,798	$ 1,547,459	308,972	$ 79,357	$ 153,010
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,204)				
5	Salaries & Wages		(54,304)			
6	Employee Pension and Benefits		(6,359)			
7	Engineering Fees		(3,057)			
8	Testing, Meter Reading, and Miscellaneous		6,495			
9	Payroll Tax				(7,177)	
10	Chemicals		(42,352)			
11	Total OCA Adjustments	$ (2,204)	$ (99,576)	$ -	$ (7,177)	
12						
13	Total Adjusted Income Before Income Taxes	$ 2,086,594	$ 1,447,883	$ 308,972	$ 72,180	$ 257,559

Community Utilities of Pennsylvania Inc. - Water Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022		OCA Recommended Rate Base	OCA Adjustment for Rate Base	
1	Original Cost of Utility Plant in Service	$ 13,579,565			$ 13,579,565	
2	Less: Accumulated Depreciation	4,948,852	(1)		4,948,852	
3	Subtotal	8,630,713	(1)	-	8,630,713	
4						
5	Deduct					
6	Contributions in Aid of Construction	1,234,996			1,234,996	
8	Net Plant Acquisition Adjustment	719,891			719,891	
9	Net Utility Plant	6,675,826		-	6,675,826	
10						
11	Less					
12	Customer Deposits	1,542			1,542	
13	Accumulated Deferred Income Taxes	454,825			454,825	
14						
15	Add					
16	Proforma Level of Plant	2,580,058			2,580,058	
17	Deferred Charges	93,189			93,189	
18	Cash Working Capital	200,456		(11,532)	188,924	(1)
19						
20	Total Rate Base	$ 9,093,162		$ (11,532)	$ 9,081,630	

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Flat/Base Rate Revenue					
3	Residential	$ 2,288,594		$ 2,288,594		$ 2,288,594
4	School	16,922		16,922		16,922
5	Availability	37,170		37,170		37,170
6	Commercial	13,857		13,857		13,857
7	Volumetric Revenue					
8	Residential	304,822		304,822		304,822
9	Commercial	3,027		3,027		3,027
10	Other Operating Revenues					
11	Forfeited Discounts	(1,789)	$ 9,124	7,335		7,335
12	Miscellaneous Service Revenues	1,180	$ (507)	673		673
13	Purchased Services	-		-		-
14	Accruals	(71,652)	$ 71,652	-		-
15	Gross Operating Revenues	2,592,131		2,672,400	645,820	3,318,220
16	Allowance for Uncollectible Accounts	(26,658) (1)		(26,658)	(2,449)	(29,107)
17	Net Operating Revenues	$ 2,565,473	$ -	$ 2,645,742	$ 648,269	$ 3,294,011
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	$ 469,108	(64,290)	$ 404,818		$ 404,818
21	Employee Pensions & Benefits	132,598	(7,528)	125,070		125,070
22	Sledge Hauling & Sewer Rodding	226,788		226,788		226,788
23	Purchased Power	125,637		125,637		125,637
24	Chemicals	129,205	(70,266)	58,939		58,939
25	Materials, Supplier, and Other Maintenance Expenses	134,556	(30,409)	104,147		104,147
26	Engineering Fees	11,784	(3,620)	8,164		8,164
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	4,517		4,517		4,517
29	Contractual Services - Other	322,435		322,435		322,435
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	26,736		26,736		26,736
32	Insurance - Other	60,070		60,070		60,070
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	53,513		53,513		53,513
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	43,464		43,464		43,464
36	Regulatory Commission Expenses - Other	-		0		0
37	Testing, Meter Reading, and Miscellaneous Expenses	65,303	(18,551)	46,752		46,752
38	Total Operating Revenue Deductions	1,805,714		1,611,051		$ 1,611,051
39						
40	Operating Income Before Income Taxes	759,759		1,034,691		1,682,959
41	.					
42	Operating Expenses					
43	Depreciation	665,056	(23,640)	641,416		641,416
44	Amortization of PAA	(58,573)		(58,573)		(58,573)
45	Taxes Other Than Income Taxes	101,940 (2)	(1,533)	100,407		100,407
46	Amortization of CIAC	(86,762)		(86,762)		(86,762)
47		621,661		596,488		596,488
48	Income Taxes					
49	Federal Income Tax	174,497	(35,619)	138,878		138,878
50	State Income Tax	92,224	(18,825)	73,399		73,399
51		266,721		212,277		212,277
52						
53	Net Operating Income	$ (128,623)	$ (194,663)	$ 225,925	$ 648,269	$ 874,194
54						
55	Rate Base	$ 13,302,091	(989,499)	$ 12,312,592		$ 12,312,592
56						
57	Return On Rate Base	-0.97%		1.83%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates
(2) Supporting Schedule No. 5

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	
1	Rate Base	$ 12,312,592	(1)
2	Required Rate of Return	7.10%	(2)
3			
4	Net Operating Income Required	$ 874,194	
5	Net Operating Income at Present Rates	228,374	
6			
7	Required Change in Company Revenue	$ 645,820	

Notes:

(1) Schedule SLS-3
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,645,742	$ 1,805,714	519,721	$ 101,940	$ 218,367
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,449)				
5	Salaries & Wages		(64,290)			
6	Employee Pension and Benefits		(7,528)			
7	Engineering Fees		(3,620)			
8	Materials, Supplier, and Other Maintenance Expenses		(30,409)			
9	Testing, Meter Reading, and Miscellaneous		(18,551)			
10	Payroll Tax				(1,533)	
11	Chemicals		(70,266)			
12	Total OCA Adjustments	$ (2,449)	$ (194,663)	$ -	$ (1,533)	$ -
13						
14	Total Adjusted Income Before Income Taxes	$ 2,643,293	$ 1,611,051	$ 519,721	$ 100,407	$ 412,113

Community Utilities of Pennsylvania Inc. - Wastewater Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022	OCA Adjustment for Rate Base	OCA Recommended Rate Base	
1	Original Cost of Utility Plant in Service	$ 21,800,965	$ (987,784)	$ 20,813,181	
2	Less: Accumulated Depreciation	10,455,892	34,458	(10,421,434)	
3	Subtotal	11,345,073		10,391,747	
4					
5	Deduct				
6	Contributions in Aid of Construction	1,775,060		1,775,060	
8	Net Plant Acquisition Adjustment	1,057,608		1,057,608	
9	Net Utility Plant	8,512,405	-	7,559,079	
10					
11	Less				
12	Customer Deposits	1,825		1,825	
13	Accumulated Deferred Income Taxes	774,535		774,535	
14					
15	Add				
16	Proforma Level of Plant	5,272,944		5,272,944	
17	Deferred Charges	66,921		66,921	
18	Cash Working Capital	226,181	(36,173)	190,008	(1)
19					
20	Total Rate Base	$ 13,302,091	$ (989,499)	$ 12,312,592	

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12

Community Utilities of Pennsylvania Inc.

Adjustment to Salarires & Wages - Employees and Employee Pensions and Benefits
For the Rate Year Ending December 31, 2022

Line No.					Water Allocation (45.79%)	Wastewater Allocation (54.21%)
1	**Salaries & Wages - Employees**					
2	FTY Salary	$	909,431	(1)		
3	Less: Vacant Positions		65,755	(2)		
4	Salary Subject to Annual Increase		843,676			
5	3% Increase Annual Increase		25,310			
6	Salary with Increase		868,986			
7	Add: Vacant Positions		65,755			
8	FPFTY Salaries Per OCA		934,741			
9	FPFTY Salaries Per Company		1,053,335	(1)		
10	Variance	$	(118,594)		$ (54,304)	$ (64,290)
11						
12	**Payroll Tax**					
13	FPFTY Salary Increase	$	25,310			
14	FICA Adjustment (7.65%)		1,936			
15	Payroll Tax Adjustment FTY to FPFTY	$	1,936			
16	FTY Payroll Tax		68,265			
17	FPFTY Payroll Tax Per OCA	$	70,201			
18	FPFTY Payroll Tax Per Company	$	68,820	(3)		
19	Variance	$	1,381		$ 632	$ 749
20						
21	**Employee Pension and Benefits**					
22	FPFTY Salary Increase	$	25,310			
23	Non-Elective 401k Contribution (3%)	$	759			
24	Company 401k Match (4%)		1,012			
25	Pension and Benefits Adjustment FTY to FPFTY	$	1,772			
26	FTY Pension and Benefits		228,930	(1)		
27	FPFTY Pension and Benefits Per OCA	$	230,702			
28	FPFTY Pension and Benefits Per Company		244,588	(1)		
29	Variance	$	(13,886)		$ (6,359)	$ (7,528)

Notes:

(1) Direct Testimony of Perry Brown Schedule WP-PB-02 Salaries and Wages Forecast for Water and Wastewater
(2) Company Response to I&E-RE-4-D Salary & Benefits 2021 & 2022
(3) Does not match the Company's Response to I&E-RE-4-D Salary & Benefits 2021 & 2022 calculation of payroll tax, which results in an increase

Community Utilities of Pennsylvania Inc.

Adjustment for Chemical Expense
For the Rate Year Ending December 31, 2022

Line No.		5480 Chlorine		5490 Other Treatment Chemicals		5485 Odor Control Chemicals		Total Annual Chemical Expense
1	2018	$ 7,256	(1)	$ 153,460	(1)	$ 2,692	(1)	$ 163,408
2	2019	12,311	(1)	105,772	(1)	7,690	(1)	125,773
3	2020	3,963	(1)	45,437	(1)	1,260	(1)	50,660
4	3-year Average	$ 7,843		$ 101,556		$ 3,881		$ 113,280
5								
6								

			Water		Wastewater	
7						
8		**Total 5480 Chlorine Expense**	**ERC Allocation Weight**	**Total 5480 Chlorine Expense for Water**	**ERC Allocation Weight**	**Total 5480 Chlorine Expense for Wastewater**
9	Amount Per Company	$ 7,843	100.00%	$ 7,843	0.00%	$ -
10	Amount Per OCA	16,448	100.00%	16,448	0.00%	0
11	OCA Adjustment			8,605		0
8		**Total 5485 Odor Control Expense**	**ERC Allocation Weight**	**Total 5485 Odor Control Expense for Water**	**ERC Allocation Weight**	**Total 5485 Odor Control Expense for Wastewater**
9	Amount Per Company	$ 13,820	0.00%	$ -	100.00%	$ 13,820
10	Amount Per OCA	3,881	0.00%	0	100.00%	3,881
11	OCA Adjustment			0		(9,939)
8		**Total Chemicals 5490 Other Treatment Chemicals**	**ERC Allocation Weight**	**Total 5490 Other Treatment Chemicals Expense for Water**	**ERC Allocation Weight**	**Total 5490 Other Treatment Chemicals Expense for Wastewater**
9	Amount Per Company	$ 212,839	45.79%	$ 97,459	54.21%	$ 115,380
10	Amount Per OCA	101,556	45.79%	46,503	54.21%	55,054
11	OCA Adjustment			(50,956)		(60,326)
	Total OCA Adjustment			$ (42,352)		$ (70,266)

Notes:

(1) Per the Company's response to OCA Set II-8 Chemical Expense 2021 & 2022 workbook

Community Utilities of Pennsylvania Inc.

Adjustment for Engineering Fee Expense
For the Rate Year Ending December 31, 2022

Line No.		Annual Expense		Adjustment to Remove Irregular Expenses		Adjusted Annual Expense
1	2018	$ 3,243.75	(1)	$ -		$ 3,243.75
2	2019	10,176	(1)			10,176
3	2020	44,372	(1)	31,528	(1)	12,844
4	3-year Average					$ 8,755
5	Normalization of Irregular Expenses (5 years)					6,306
	Amount Per OCA					$ 15,060
6						
7				Water		Wastewater
8		**Total Expense**		**ERC Allocation Weight**	**Total Expense for Water**	**ERC Allocation Weight**	**Total Expense for Wastewater**
9	Amount Per Company	$ 21,737		45.79%	$ 9,953	54.21%	$ 11,784
10	Amount Per OCA	15,060		45.79%	6,896	54.21%	8,164
11	OCA Adjustment				(3,057)		(3,620)

Notes:

(1) Per the Company's response to I&E-RE-1-14-A 2018-2020 Engineering

Community Utilities of Pennsylvania Inc.

Adjustment for Testing, Meter Reading, and Miscellaneous Expense
For the Rate Year Ending December 31, 2022

Line No.		Water Amount Per Company		Wastewater Amount Per Company
1	2018	$ 40,104	(1)	$ 40,247
2	2019	55,291	(1)	71,105
3	2020	54,120	(1)	28,904
4	3-year Average	$ 49,838		$ 46,752
5	Amount Per Company	43,343		65,303
6	OCA Adjustment	$ 6,495		$ (18,551)

Notes:

(1) Per the Company's response to I&E-RE-35-E&F Testing Meter Reading and Misc - 2018-2020

Community Utilities of Pennsylvania Inc.

Adjustments to Taxes Other Than Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	Rate	Amount Per OCA
1	**Water**			
2	Utility Commission Tax	$ 2,638,122	0.66%	$ 17,412
3	Real Estate Tax	16,159,623	0.14%	22,623
4	Payroll Taxes			32,145 (1)
5	Total			$ 72,180
6				
7				
8	**Wastewater**			
9	Utility Commission Tax	$ 3,294,011	0.66%	$ 21,740
10	Real Estate Tax	27,073,908	0.15%	40,611
11	Payroll Taxes			38,056 (1)
12	Total			$ 100,407

Notes

(1) Calculated on Schedule SLS-7 line 18 multiplied by water and wastewater allocation ratios

Community Utilities of Pennsylvania Inc.

Adjustments to Cash Working Capital
For the Rate Year Ending December 31, 2022

Line No.			Amount Per OCA
1	**Water**		
2	Maintenance and General Expenses	$	1,447,883
3	Taxes Other Than Income		72,180
4	Total	$	1,520,063
5			
6	Total Cash Working Capital	$	190,008
7			
8	**Wastewater**		
9	Maintenance and General Expenses	$	1,611,051
10	Taxes Other Than Income		100,407
11	Total	$	1,711,459
12			
13	Total Cash Working Capital	$	213,932

Community Utilities of Pennsylvania Inc.

Adjustment to Allowance for Uncollectible Accounts
For the Rate Year Ending December 31, 2022

Line No.		Water					
		Amount Per Present Rates		Amount Per OCA		OCA Adjustment	
1							
2							
3	Revenue	$ 2,043,428	(1)	$ 2,653,287	(2)		
4	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)		
5	Allowance for Uncollectible Accounts	$ (17,165)		$ (19,369)		$ (2,204)	
6							
7		**Wastewater**					
8		Amount Per Present Rates		Amount Per OCA		OCA Adjustment	
9							
10	Revenue	$ 2,592,131	(1)	$ 3,318,220	(4)		
11	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)		
12	Allowance for Uncollectible Accounts	$ (21,774)		$ (24,223)		$ (2,449)	

Notes:

(1) Direct Testimony of Perry Brown, Exhibit CUPAW EX PAB-1 p 2-3
(2) Schedule SLS-1
(3) Direct Testimony of Perry Brown, page 11, line 8
(4) Schedule SLS-4

Community Utilities of Pennsylvania Inc.

Adjustment to Federal and State Taxes
For the Rate Year Ending December 31, 2022

Line No.		Water	Wastewater
1	Total Revenue	$ 2,638,122	$ 3,294,011
2	Less:		
3	Operating Expenses	1,447,883	1,611,051
4	Depreciation and Amortization	308,972	496,081
5	Taxes Other Than Income	72,180	100,407
6	Interest Expense	240,451	351,748
7	Taxable Income	$ 568,636	$ 734,723
8			
9	**State Taxes**		
10	Taxable Income	568,636	734,723
11	State Tax Rate	9.99%	9.99%
12	FPFTY State Taxes	$ 56,807	$ 73,399
13			
14	**Federal Taxes**		
15	Taxable Income	$ 568,636	$ 734,723
16	Less: State Taxes	56,807	73,399
17	Federal Taxable Income	$ 511,829	$ 661,324
18	Federal Tax Rate	21%	21%
19	FPFTY Federal Taxes	$ 107,484	$ 138,878

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Stacy L. Sherwood, hereby state that the facts set forth in my Direct Testimony, OCA Statement 1, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 13, 2021 Signature: _____
*315544 Stacy L. Sherwood

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 2

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission v. Community Utilities of Pennsylvania, Inc.	Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

DIRECT TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

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Introduction

Q. Please state your name, business address and occupation.

A. My name is Noah D. Eastman. My business address is 555 Walnut Street, Forum Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate.

Q. Please describe your educational background and qualifications to provide testimony in this case.

A. I have a bachelor's degree in Economics with a Business Concentration from Shippensburg University. My educational background and qualifications are described in Appendix A.

Q. On whose behalf are you providing this testimony?

A. The Pennsylvania Office of Consumer Advocate (OCA).

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my direct testimony is to provide my recommendation for the appropriate overall rate of return to the Pennsylvania Public Utility Commission (PUC) for Community Utilities of Pennsylvania, Inc. (CUPA or Company), and respond to the Direct Testimony of Mr. Dylan D'Ascendis on behalf of CUPA.

Summary of Findings

Q. What was the recommendation of company witness D'Ascendis regarding the rate of return and its components?

A. Using the Discounted Cash Flow model, the Risk Premium Model, and the Capital Asset Pricing Model Mr. D'Ascendis recommends a rate of return of 7.58%, including a 10.35% return on equity component that includes a 100 basis point size adjustment. This, along with the recommended capital structure, is detailed below in Table 1, which is found on page 5 of CUPA Statement No. 5.

Type Of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.93%
Total	100.00%		7.57%

Table 1

Q. What is your recommended capital structure and costs of debt and equity for ratemaking purposes?

A. My recommendation is below in Table 2. I accept the proposed capital structure and cost of debt recommended by company witness D'Ascendis, and my return on equity estimate is 9.34%. My final rate of return recommendation is 7.10%.

	Percent	**Cost Rate**	**Cost of Money**
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Table 2[1]

[1] Page 1, Exhibit NDE-1

Cost of Capital Principles

Q. Please explain the cost of capital and its components.

A. The cost of capital is the return that investors expect to earn on investment in companies of similar risk profiles. This can be alternatively described as an opportunity cost, or the highest return on an alternative investment of that similar risk profile. The primary components of the cost of capital are capital structure, cost rates of debt and preferred stock, and the cost of common equity. When combined, the elements and resulting cost of capital helps to provide the revenue requirement, an integral piece in regulatory ratemaking.

Q. Please explain the cost of common equity, and its value in regulatory ratemaking.

A. The cost of common equity is the return that investors would expect to return on the investment in the stocks, or ownership, of companies facing similar risk. Like my explanation above, this is what is commonly referred to as opportunity cost. This number does have importance in regulatory ratemaking but is not the final measure to be considered when attempting to calculate a fair allowed return on equity.

Q. What is the main purpose of the cost of common equity when calculating a fair allowed return on equity?

A. The cost of common equity provides a good starting point for estimating a range and then making a final recommendation. The range begins with setting a minimum around the opportunity cost of common equity followed by adjustments to reflect any issues regarding quality of service, economic, or regulatory factors.

Q. Where should the maximum be set?

A. Setting a maximum is not required if the PUC has enough information to be able to accurately judge when rates will reach an unreasonable rate. However, as a rule the maximum should be set below the level of return that would be expected in more highly profitable and speculative enterprises. This is one of the major findings in Bluefield Water Works v. Public Service Comm'n, 262 U.S. 679 (1923).

Q. What were the findings of Bluefield Water Works v. Public Service Comm'n, 262 U.S. 679 (1923)?

A. The opinion of the court was:

> "A public utility is entitled to such rates as will permit it to earn a return on the value of the property it employs for the convenience of the public equal to that generally being made at the same time and in the same region of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures."

In short, the court found that utilities were entitled to a return similar to that of other utilities with similar risk profiles but is not entitled to a return equal to that of companies in non-similar industries facing different risk.

Q. What methods have you used to calculate the cost of capital?

A. I accept CUPA's proposed capital structure and debt cost, with those seen above. I calculated the cost rate of equity for ratemaking purposes using the constant growth

Discounted Cash Flow (DCF) Model, with the Capital Asset Pricing Model (CAPM) as a check on reasonableness. As CUPA is not a publicly traded company, nor is its parent publicly traded, all inputs will be derived from a proxy group of 7 regulated water and wastewater companies. Those companies are: American States Water Company, American Water Works Company, Inc., California Water Service Group, Essential Utilities, Inc., Middlesex Water Company, SJW Group, and York Water Company.

Return on Equity

Discounted Cash Flow Method

Q. Please explain what process led you to your DCF recommendation.

A. I used the Constant Growth DCF model. The dividend discount model and the Constant Growth DCF model are, respectively:

$$P_0 = \frac{D_1}{k - g} \qquad K = \frac{D_1}{P_0} + g$$

K = Common Equity Cost Rate
D_1 = The expected dividend at the end of period
P_0 = Current Market Price
g = the expected growth rate

After the derivation, the common equity cost rate is easily explained as the dividend yield plus the expected growth rate.

Q. What inputs did you use for your DCF model?

A. To calculate dividend yields, I used two methods to capture both historical and future expected returns on equity. The first method utilized the estimated growth in earnings per share (EPS) of the seven regulated water utilities that made up my proxy group. These EPS growth rates were assembled from Value Line Investment Surveys, Yahoo! Finance,

and Zack's Investment Research (Page 1, Exhibit NDE-2). With that, the most recent dividends of all seven companies along with the 90-day average closing price of their respective stocks were used to derive the dividend yield for my model (Page 3, Exhibit NDE-2). These dividend yields were adjusted to accommodate growth, so they were multiplied by one half the estimated growth rate.

Forecasting growth is incredibly difficult, and because of that difficulty there is a large amount of uncertainty in growth projections. Because of this, my second method utilized the S&P 500 Utilities index to provide a historical estimate of growth to ensure reasonableness. To measure the estimated growth rate, I calculated the 5-year Compound Annual Growth Rate of the S&P 500 Utilities Index. To measure the dividend yield, I used the yield measurement provided by Yahoo! Finance for the Utilities Select Sector SPDR Fund (XLU), an index fund designed to track the S&P 500 utilities index (Page 2, Exhibit NDE-2).

Q. What were the results of your DCF analyses?

A. The results of my two DCF analyses are on Page 2 of Exhibit NDE-1 and are also summarized below.

Results of DCF Calculation Using Proxy Group	9.34%
Results of DCF Calculation Using S&P Utilities	10.19%

Capital Asset Pricing Model

Q. What purpose does the CAPM serve in your analysis?

A. The CAPM serves as a check on reasonableness. The PUC has historically used the DCF method as the primary determinant of estimating cost of equity.[2]

Q. Please explain your calculation of return on equity using the CAPM and adjusted CAPM.

A. The Capital Asset Pricing Model describes the relationship between a security's investment risk and its market rate of return. Investors use this to identify the rate of return they should expect for a security of similar risk. The model uses the market risk premium, risk free rate, and the financial metric Beta (β) to calculate the return on an asset with respect to its risk. The formula for calculating the expected return on an asset given its risk is:

$$K = R_f + \beta(R_m - R_f)$$

K = Common Equity Cost Rate
R_f = Risk-free rate
$R_m - R_f$ = Market Risk Premium
β = Beta

I also employed an adjusted CAPM, sometimes referred to as an empirical CAPM (ECAPM). Historically, the theoretical risk return relationship in the CAPM has been incorrect in its predictive capability. For companies with a beta below 1, the estimated expected returns have been below the later observed returns, and for companies with a beta above 1 the estimated expected returns have been above the later observed returns.

[2] Final Opinion and Order. R-2010-2179103. Pp. 62-73.
Final Opinion and Order. R-2012-2290597. P. 80
Final Opinion and Order. R-2017-2640058 p. 119

In short, the CAPM framework underestimates the return on betas below 1 and overestimates the return on betas above 1. This is visualized in figure 1 below:

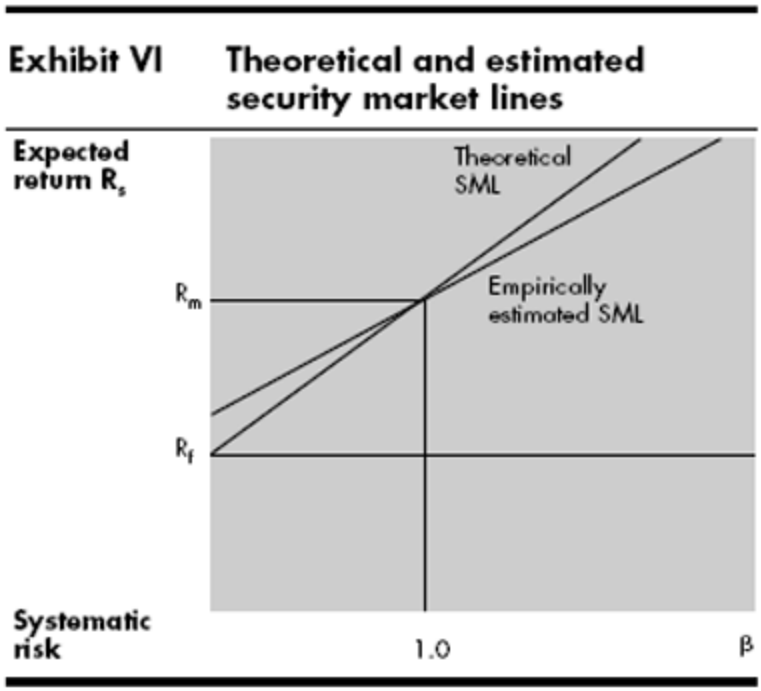


Figure 1[3]

To remedy this, an adjustment is made to the CAPM equation to weight the effect of the market more heavily on the estimated return on equity. This can be seen below in the equation for my ECAPM:

$$\underline{K = R_f + 0.25(R_m - R_f) + 0.75\big(\beta(R_m - R_f)\big)}$$

K = Common Equity Cost Rate
R_f = Risk-free rate
$R_m - R_f$ = Market Risk Premium
β = Beta

Q. What inputs did you use in your CAPM models?

[3] Mullins, David W. (1982). *Does the Capital Asset Pricing Model Work?* Harvard Business Review. January 1982.

A. To calculate the Risk-free rate, I used the 6-month average of yields on 30-year treasury securities. I used a 6-month average so as not to give too much weight to any particular day's rates, and I used 30-year treasury yields to represent the long-term nature of investment decisions.

Q. How did you calculate the Market Risk Premium?

A. To estimate the Market Premium, I used two methods which can be found in Exhibit NDE-3.

First, I calculated the historical market risk premium of the S&P 500 using the closing price of each year from 1928-2020. I used a geometric mean of the yearly returns of the S&P 500 to do this, with the resulting return being 9.79%. To calculate the risk-free rate of the historical CAPM I used 10-year treasury returns, the security with the longest term that was also tracked consistently during the same time period. I again calculated a geometric mean, leading to a 4.79% historical risk-free rate, and a resulting Market Risk Premium of 5.00%.[4]

To calculate my forward looking CAPM, I used analyst forecasts of the Market Risk Premium for the next 10 years. The analysts and firms utilized were Vanguard, Schwab, Seeking Alpha, JP Morgan and Duff & Phelps and their individual forecasts can be found on Page 2 of Exhibit NDE-3. These forecasts ranged from 4.1% per year for the next

[4] 9.79% - 4.79% = 5.00%

decade to 7.2% per year. The average of these forecasts was 5.68%, however, using my own judgement I chose to use 6.5% as the expected Market Risk Premium.

Q. Why did you utilize a geometric mean instead of an arithmetic mean?

A. The arithmetic mean does takes an average of all the yearly returns, but it does so with each year independent of the rest. This leads to an inaccurate depiction of the long-term return on an asset. An example of this can be explained through a simplified analysis of the following hypothetical:

> If an investor were to invest $100 in a stock, and the individual yearly returns of the following 5 years respectively were, 90%, 10%, 20%, 30%, and -90%, an investor would end year five with only $32.60 of their original investment. However, the arithmetic mean would lead an investor to the conclusion that the stock averaged a 12.00% year over year return.[5] A geometric mean would have been more accurate of reality showing a -20.08% year over year return[6]. Table 2 below holds a summary of this hypothetical.

[5] $12.00\% = \frac{90\%+10\%+20\%+30\%+(-90\%)}{5}$

[6] $-20.08\% = \left[(1+90\%)*(1+10\%)*(1+20\%)*(1+30\%)*\left(1+(-90\%)\right)\right]^{\frac{1}{5}} - 1$

Investment	$ 100.00
Yearly Return	Year End Value
90%	$ 190.00
10%	$ 209.00
20%	$ 250.80
30%	$ 326.04
-90%	$ 32.60
Arithmetic	12.00%
Geometric	-20.08%

Table 3

Q. How did you calculate Beta for use in your CAPM analysis?

A. In my measure of Beta, I used the daily prices of the past 6 months for the 7 companies in my proxy group and the S&P 500 utilities index. Beta works by taking the covariance of the returns on the stock and the market and dividing that by the variance of market. This provides a figure that attempts to represent that stock's volatility in relation to the market. After this I adjusted the betas using the Bloomberg Method, which assumes that over time Beta will regress toward the market average (1.0).[7] My breakdown of each proxy company's Beta is on Page 3 of exhibit NDE-3.

Q. What were the results of your CAPM and ECAPM analysis?

The results of my CAPM and ECAPM analysis are on page 1 of Exhibit NDE-3 and are also summarized below.

CAPM	7.18%
ECAPM	7.55%

[7] $\beta = 0.67(Raw_\beta) + 0.33(1)$

Final Return on Equity Recommendation

Q. Did you perform any other analyses to attempt to estimate the return on equity?

A. I did not perform any other analyses, however, I did collect the Quarterly Earnings Reports of the 6 largest water distribution companies (Pennsylvania American Water, Aqua America, Suez, York Water, Newtown Artesian, Columbia Water) in Pennsylvania to provide a check to my estimates for return on equity. The average return on equity in the past 5 years for these companies was 8.42%, and the summary of this information can be found on page 1 of Exhibit NDE-4.

Q. What is your final recommendation for the return on equity?

A. In setting my recommendation, as I explained above, the recommendation begins at the cost of common equity. While I do not support giving equal weight to the DCF and CAPM models, the range of results of all DCF and CAPM models was 7.18% - 10.19%, and the average of these results was 8.52%. However, in keeping with the tradition of recommending a specific equity return and maintaining the primary use of the DCF model in ROE estimation, my recommendation for the commission approved Return on Equity is the DCF rate of 9.34%. The DCF indicated for the proxy group was 9.34%. The indicated DCF for the S&P utilities was 10.19%. The CAPM results ranged between 7.18% - 7.55%. Using the CAPM results as a check supports using the lower of the DCF results, as does the 8.42% historic average return for the 6 largest Pennsylvania water utilities. I believe that a return on equity set at this rate provides a reasonable return to investors and is capable of attracting capital for future investment in the CUPA system. However, as is discussed by Ms. Sherwood in OCA Statement 1, the PUC should take

special consideration as to the effect of the COVID-19 pandemic on CUPA customers and adopt an ROE at the lowest reasonable level to minimize impact on ratepayers.

Results of DCF Calculation Using Proxy Group	9.34%
Results of DCF Calculation Using S&P Utilities	10.19%
Results of CAPM Calculation	7.18%
Results of Adjusted CAPM	7.55%
Realized ROE of PA Regulated Water Companies (as a check)	8.42%
Average of Models:	8.52%
Recommended ROE:	9.34%

<u>Comments on the Testimony of Mr. D'Ascendis</u>

Q. Do you have any comments on the testimony of Mr. D'Ascendis on behalf of Community Utilities of Pennsylvania?

A. Yes. I have comments regarding his recommended 1.00% size adjustment, his use of forecasted treasury yields, his use of arithmetic means to calculate year over year return, and his market models framework.

Q. Do you agree with Mr. D'Ascendis application of a size adjustment resulting in a 1.00% increase in recommended ROE?

A. No, I do not agree with the application of a size adjustment. It is important to understand that size is a diversifiable risk and investors are surely taking this into account when making decisions. Dr. Aswath Damodaran has studied equity risk premiums extensively, and in doing so has found that the "small cap premium" (size premium) exists only historically and is extremely volatile.[8] More importantly though, he has found that the premium's existence is generated almost entirely in January and is likely caused by some other factor beyond size.[9] Finally, Dr. Damodaran computes the size premium and compares it to the S&P 500 using raw data, finding that what measured as a 4.55% small cap premium was actually only 0.06% higher than the S&P 500. Over the very long term historically, the small cap premium existed, but today it is insignificant.[10]

Q. Why should yield projections not be used when attempting to estimate a proper ROE?

A. Projections of yield and interest rates for the past decade been inaccurate. The consensus among those involved in creating forecasts is most often an expected increase in rates and

[8] Aswath Damodaran, Equity Risk Premiums (ERP): Determinates, Estimation and Implications – The 2018 Edition (paper updated, March 2018) page 44.
[9] Ibid. p. 44
[10] Ibid. p. 105

yields, which is often wrong as they ignore the possibility of a decrease. The inaccuracy of these forecasts can be seen in figures 2 and 3 below.

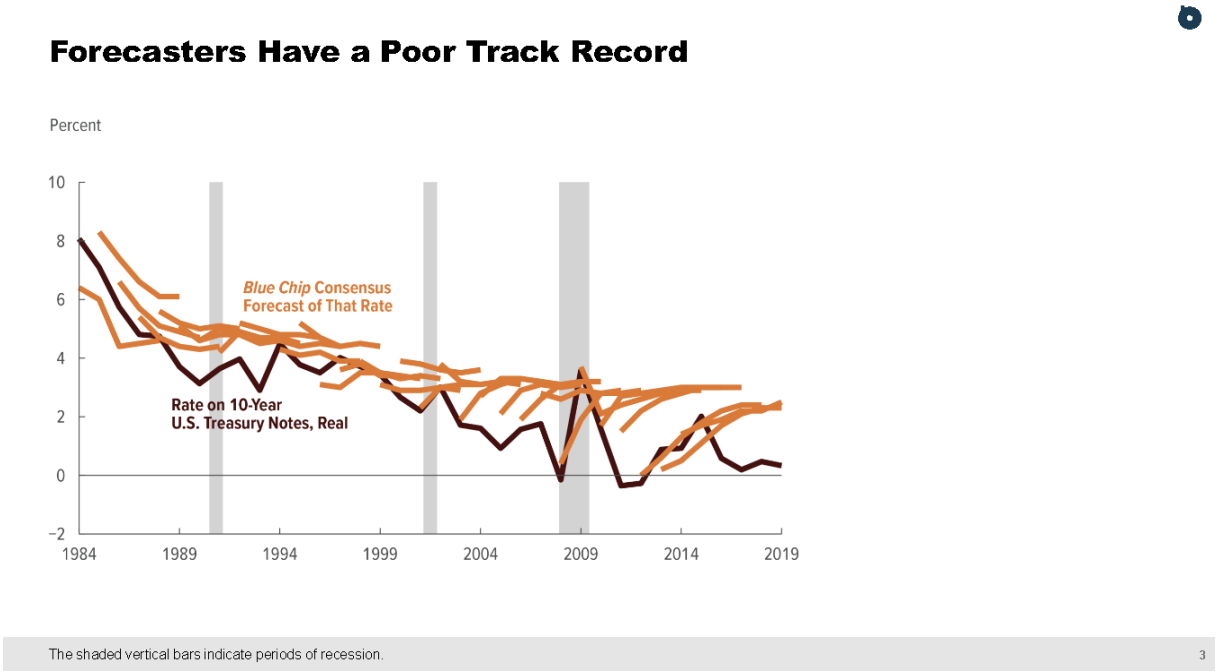


Figure 2 (Edward Gambler. Congressional Budget Office. The Historical Decline in Real Interest Rates and Its implications for CBO's Projections. 2021)

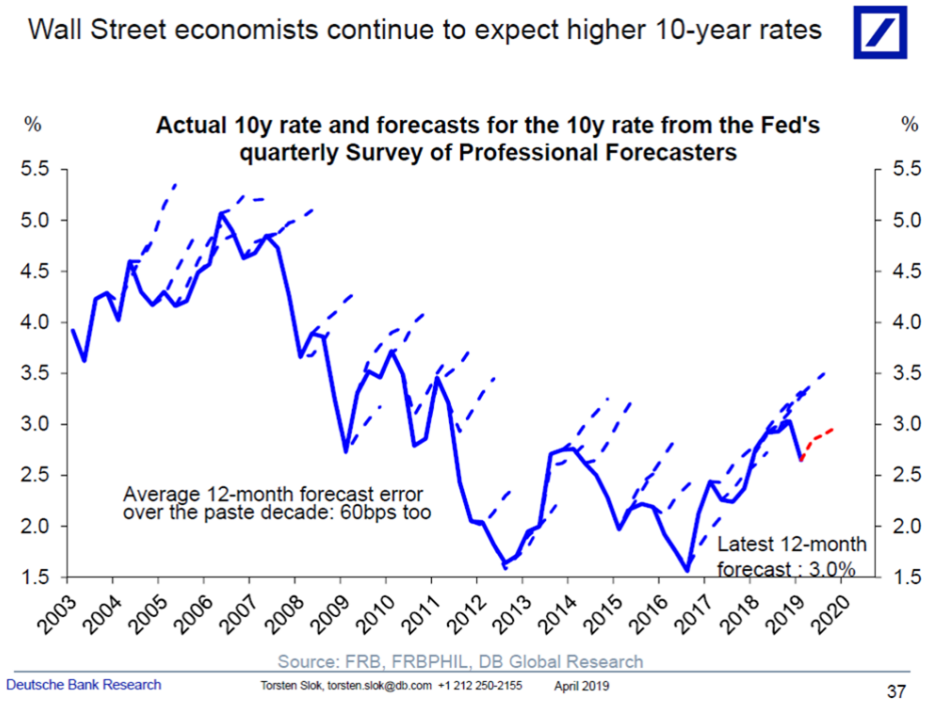


Figure 3 (Torsten Slok. Deutsche Bank. (2019))

Q. Does this mean yields will not increase?

A. No. All this means is that relying on the forecasts instead of current yields will likely lead to incorrect forecasts and miscalculated returns on equity. The best method is to use current yields on securities to calculate rates, as investors make their decisions using all available information.

Q. Does the use of projected yields distort Mr. D'Ascendis findings?

A. Yes, primarily his findings in his CAPM analyses and his Risk Premium model. The use of forecasted yields on treasury and corporate bonds is an ineffective method for calculating the risk-free rate.

Q. Does Mr. D'Ascendis use of an arithmetic mean distort his findings?

A. Yes, as I described above, the arithmetic mean overstates the historical year over year return because it looks at each individual years return independently. The geometric mean calculates the true year over year return on investment.

Q. What is your recommendation regarding Mr. D'Ascendis use of his market models framework?

A. I believe this model should not be considered in deciding the fair return on equity for CUPA.

Regarding the DCF estimation, while the residual standard errors and beta coefficients do indicate similar total investment risk, these are based on historical record, and these measures do not consider the difference in the possible futures of the industries of the individual companies. Yes, the historical data for this group indicates a similar investment profile, but the possible futures of these companies could not be more different. Among this group of non-price regulated companies is multiple retailers, pharmaceutical, biotech, and transportation companies. These companies face very different possible futures, and those possible futures are indicated in the analysts' projections of EPS growth.

Regarding the CAPM analysis and Risk Premium Model, the historical Market Risk Premium is based on arithmetic means, which overstate the year over year return for each individual asset. Along with that, in calculating the forward-looking risk premiums, the use of forecasted returns on treasury and corporate bonds is not reasonable for two reasons: One, as I described earlier, the best forecasts of rates and yields are almost always wrong. Two, even if we could forecast these rates, it leads to the assumption that the forecasters and analysts know more than the market.

The issue with the market models forecast is that it relies on too many uncertain projections. When that uncertainty is combined with the difference in industry between the companies in the non-price regulated proxy group and price regulated water, the return on equity is ultimately miscalculated.

Conclusion

Q. Please summarize your conclusions and recommendations.

A. I recommend an ROE of 9.34%. I believe that this level of return will attract capital, maintain investors, and keep rates reasonable for customers. In calculating the final rate of return for ratemaking purposes, my recommended rate of return is 7.10%. This is summarized in table 3 below.

	Percent	Cost Rate	Cost of Money
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Table 4

Also, I recommend that the Commission reject Mr. D'Ascendis' size adjustment.

Q. Does this complete your direct testimony?

A. Yes, it does. However, I reserve the right to modify or supplement my testimony if necessary.

APPENDIX A

QUALIFICATIONS OF

NOAH D. EASTMAN

Education

2019 B.S. Economics, Shippensburg University

Currently Pursuing: M.B.A. - Finance, Shippensburg University

Positions

Jan. 2020 – Present Regulatory Analyst, Pennsylvania Office of Consumer Advocate

Experience

I am currently employed by the Pennsylvania Office of Attorney General, Office of Consumer Advocate (OCA) as a Regulatory Analyst. My responsibilities include financial and economic analysis, rate of return determination, and other business operations analysis in the review of utility filings with the Pennsylvania Public Utility Commission. Additional responsibilities with the OCA include formulating recommendations for utility filings and preparing testimony.

Relevant Training

IPU Accounting and Ratemaking Course, April 2020

IPU Intermediate Course, August 2020

Previous Cases wherein testimony was submitted

McCloskey v. Hidden Valley Utility Service - C-2014-2447138, C-2014-2447169

Application of Pennsylvania American Water Company - A-2020-3019634

PaPUC v. Duquesne Light Company – R-2021-3024750

PaPUC v. PECO Energy Company – Electric Division – R-2021-3024601

Previous cases worked; no testimony submitted

PaPUC v. Reynolds Disposal Company - R-2020-3019612

Application of Pennsylvania American Water Company - A-2020-3021460

PaPUC v. Pike County Light and Power Company – R-2020-3022135, R-2020-3022134

Application of Aqua Pennsylvania Wastewater, Inc. - A-2021-3026132

Application of Aqua Pennsylvania Wastewater, Inc. – A-2021-3024267

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission v. Community Utilities of Pennsylvania, Inc.	Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

SCHEDULES ACCOMPANYING THE

DIRECT TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

Recommended Cost of Capital

	Percent	**Cost Rate**	**Cost of Money**
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Summary of Models

Results of DCF Calculation Using Proxy Group	9.34%
Results of DCF Calculation Using S&P Utilities	10.11%
Results of CAPM Calculation	7.18%
Results of Adjusted CAPM	7.55%
Realized ROE of PA Regulated Water Companies (as a check)	8.42%
Average of Models:	8.52%
Recommended ROE:	9.34%

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth in EPS (2)	Adjusted Dividend Yield (3)	Common Equity Cost Rate(4)
American States Water Company	1.69%	6.50%	N/A	5.20%	5.85%	1.74%	7.59%
American Water Works Company, Inc.	1.55%	8.50%	8.10%	8.60%	8.40%	1.61%	10.01%
California Water Service Group	1.60%	6.50%	N/A	11.70%	9.10%	1.67%	10.77%
Essential Utilities, Inc.	2.14%	10.00%	6.20%	6.40%	7.53%	2.22%	9.76%
Middlesex Water Company	1.32%	4.50%	N/A	2.70%	3.60%	1.34%	4.94%
SJW Group	2.10%	13.00%	N/A	7.00%	10.00%	2.21%	12.21%
York Water Company	1.51%	6.50%	N/A	4.90%	5.70%	1.55%	7.25%
						Average	8.93%
						Median	9.76%
Average of Mean and Median	9.34%						

N/A= Not Available

Notes:

(1) Most recent dividend divided by the 90 day average price ended June 30, 2021.

(2) Average of columns 2 through 4

(3) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment.

Thus, for American States Water Company, 1.69% x (1+(1/2 x 5.85%)) = 1.74%.

(4) Column 5 + Column 6.

Source of Information:

Value Line Investment Survey

www.zacks.com Downloaded on 06/30/2021

www.yahoo.com Downloaded on 06/30/2021

CAGR:	7.11%
Dividend Yields (1):	3.00%
DCF Using Historical S&P Utilities and Dividend Yield	10.11%

(1) Yahoo! Finance yield for Utilities Index (XLU)

	Date of Dividend	Dividend Amount	Yearly Dividend	Price (1)	Yield
AWR	14-May-21	$ 0.335	$ 1.34	$ 79.47	1.69%
AWK	10-May-21	$ 0.603	$ 2.41	$ 155.70	1.55%
WTRG	13-May-21	$ 0.251	$ 1.00	$ 46.88	2.14%
CWT	7-May-21	$ 0.230	$ 0.92	$ 57.66	1.60%
MSEX	13-May-21	$ 0.273	$ 1.09	$ 82.72	1.32%
SJW	7-May-21	$ 0.340	$ 1.36	$ 64.70	2.10%
YORW	29-Jun-21	$ 0.187	$ 0.75	$ 49.61	1.51%
				Average	1.70%

(1) Average price of 90 day period from March 31, 2021 through June 30, 2021 from Yahoo! Finance

CAPM	=	Rf	+	Beta	*	(Rm	-	Rf)
7.18%	=	2.18%	+	0.77	*	6.50%		
		(1)		(2)		(3)		

ECAPM		Rf				Risk Premium				Beta		Risk Premium
7.55%	=	2.18%	+	0.25	*	6.50%	+	0.75	*	0.77	*	6.50%
		(1)				(3)				(2)		(3)

(1) 6-Month Average Return on 30 year Treasury Rate
(2) Average adjusted beta, NDE-3 p. 3
(3) Forecasted Risk Premium w/ historical as a check

Aggregation of Forecasted Risk Premiums

	10 yr.		
Vanguard (1)	5.00%	Average	5.68%
Schwab (2)	6.60%	Estimate	6.50%
Seeking Alpha (3)	7.20%		
JP Morgan (4)	4.10%		
Duff & Phelps (5)	5.50%		

(1) https://pressroom.vanguard.com/nonindexed/Vanguard-economic-and-market-outlook-report-2021-120920.pdf

(2) https://www.schwab.com/resource-center/insights/content/why-market-returns-may-be-lower-in-the-future

(3) https://seekingalpha.com/article/4424107-risk-premia-forecasts-major-asset-classes-4-may-2021?utm_medium=email&utm_source=seeking_alpha

(4) https://am.jpmorgan.com/content/dam/jpm-am-aem/global/en/insights/portfolio-insights/ltcma/ltcma-full-report.pdf

(5) https://www.duffandphelps.com/-/media/assets/pdfs/publications/articles/dp-erp-rf-table-2020.pdf?la=en&hash=CEC22C0DD9928B72337F9B7E7536C753B0513063

	6 Month Beta	Adjustment (1)
AWR	0.57	0.71
AWK	0.66	0.77
CWT	0.55	0.70
MSEX	0.72	0.81
SJW	0.59	0.73
WTRG	0.69	0.79
YORW	0.81	0.87
	Average	0.77

(1) Adjustment to account for regression of Beta to 1.00

$$= 0.67 \times (\beta) + 0.33 \ (1)$$

S&P 500 Geometric Mean Returns 1928-2020	9.79%
10 Year Treasury Geometric Mean Returns 1928-2020	4.79%
Historical Market Risk Premium	5.00%

Water	31-Dec-20	31-Dec-19	31-Dec-18	31-Dec-17	31-Dec-16
AQUA	8.30%	8.24%		8.63%	10.57%
Columbia	3.70%	5.31%	8.57%		1.50%
Newtown	12.92%	3.28%		4.29%	8.77%
PAWC	8.15%	8.09%	9.03%	9.24%	8.51%
Suez	10.17%	12.15%		8.73%	9.90%
York	9.90%	9.80%	10.30%	8.40%	10.40%
Avg	8.86%	7.81%	9.30%	7.86%	8.28%
Average	8.42%				

Data compiled from Financial Reports filed with Pennsylvania Public Utility Commission

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Noah D. Eastman, hereby state that the facts set forth in my Direct Testimony, OCA Statement 2, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 13, 2021 Signature: _____
*313170 Noah D. Eastman

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

OCA STATEMENT 3

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket Nos. R-2021-3025206
	)	R-2021-3125207
Community Utilities of Pennsylvania, Inc.	)	

DIRECT TESTIMONY
OF
JEROME D. MIERZWA

ON BEHALF OF
THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 13, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I graduated from Canisius College in Buffalo, New York in 1981 with a Bachelor of Science Degree in Marketing. In 1985, I received a Master's Degree in Business Administration with a concentration in finance, also from Canisius College. In July 1986, I joined National Fuel Gas Distribution Corporation ("NFGD") as a Management Trainee in the Research and Statistical Services ("RSS") Department. I was promoted to Supervisor RSS in January 1987. While employed with NFGD, I conducted various financial and statistical analyses related to the company's market research activity and state regulatory affairs. In April 1987, as part of a corporate reorganization, I was transferred to National Fuel Gas Supply Corporation's ("NFG Supply's") rate department where my responsibilities included utility cost-of-service and rate design analysis, expense and revenue requirement forecasting, and activities related to federal regulation. I was also responsible for preparing NFG Supply's Federal Energy Regulatory Commission ("FERC") Purchased Gas Adjustment ("PGA") filings and developing interstate pipeline and spot market supply gas price projections. These forecasts were utilized for internal planning purposes as well as in NFGD's 1307(f) proceedings.

In April 1990, I accepted a position as a Utility Analyst with Exeter. In December 1992, I was promoted to Senior Regulatory Analyst. Effective April 1996, I became a Principal of Exeter. Since joining Exeter, I have specialized in evaluating the gas purchasing practices and policies of natural gas utilities, utility class cost-of-service and rate design analyses, sales and rate forecasting, performance-based incentive regulation, revenue requirement analysis, the unbundling of utility services, and the evaluation of customer choice natural gas transportation programs.

Q. HAVE YOU PREVIOUSLY TESTIFIED ON UTILITY RATES IN REGULATORY PROCEEDINGS?

A. Yes. I have provided testimony on nearly 400 occasions in proceedings before the FERC, utility regulatory commissions in Arkansas, Delaware, Georgia, Illinois, Indiana, Louisiana, Maine, Massachusetts, Montana, Nevada, New Hampshire, New Jersey, Ohio, Rhode Island, South Carolina, Texas, and Virginia, as well as before Pennsylvania Public Utility Commission ("PaPUC" or "the Commission").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. On April 12, 2021, Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") filed an application requesting to increase its rates for water service by $757,517, or 36.8 percent, and its rates for wastewater service by $998,705, or 37.9 percent. Exeter was retained by the Pennsylvania Office of Consumer Advocate ("OCA") to review the reasonableness of the requested increases, as well as the water and wastewater cost-of-service ("COS") studies and rate design proposals included in the Company's application. My testimony addresses the Company's COS studies and rate design proposals. My colleague, Ms. Stacy Sherwood, addresses the reasonableness of the Company's requested increases.

Q. PLEASE IDENTIFY THE SERVICE TERRITORIES SERVED BY CUPA AND THE SERVICES PROVIDED IN EACH TERRITORY.

A. CUPA has four service territories or divisions: Utilities, Inc. of Pennsylvania, Westgate, Penn Estates, and Tamiment. In the Utilities, Inc. of Pennsylvania service territory, CUPA provides wastewater service; water service is provided by Aqua Pennsylvania. CUPA provides water service in the Westgate service territory, but does not provide wastewater service. CUPA provides both water and wastewater services in the Penn Estates and Tamiment service territories.

Q. ARE THERE ADDITIONAL CONSIDERATIONS IN THIS PROCEEDING THAT ARE NOT OFTEN SEEN IN A TRADITIONAL BASE RATE CASE?

A. Yes. As explained in the Direct Testimony of Ms. Sherwood in OCA Statement 1, Pennsylvania and the rest of the world has faced significant hardships due to the COVID-19 Pandemic. The impact of the COVID-19 Pandemic continues to adversely affect Pennsylvania residents. The Commission should consider the impacts of the COVID-19 Pandemic when reaching its decision as to whether any increase should be authorized for CUPA in this proceeding. Authorizing a rate increase in this proceeding would further increase the hardships caused by the COVID-19 Pandemic. The economic effects of the COVID-19 Pandemic will not be fully known for some time, however, the Formal Complaints filed in this proceeding and the testimony provided at the Public Input Hearing indicates that many of CUPA's customers have been and continue to be impacted. The Commission should carefully consider and weigh these important consumer interests when evaluating the Company's claims for rate increases. Counsel for the OCA will further address CUPA's request for rate relief in its briefs.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A. I have reached the following conclusions:

- The Tamiment water service volumetric usage charge should be moved 70 percent toward the volumetric charge that would be applicable on a consolidated basis. Under this recommendation, when combined with my recommendation concerning customer charges, the average Tamiment Residential customer would experience a rate increase of 1.5 times the system average increase which is consistent with the concept of gradualism;

- All current water service monthly customer charges should be maintained;

- The Tamiment water service availability charge should be increased 1.5 times the system average increase;

- CUPA's proposed Low-Income Residential water service volumetric charge should be approved as a pilot program;

- CUPA's proposal to consolidate the wastewater rates of the Tamiment service territory and charge Tamiment customers a fixed flat rate should not be approved. CUPA should convert customers in its Utilities Inc. of Pennsylvania and Penn Estates service territories that are currently charged flat rates to a system of fixed and volumetric charges similar to the charges assessed to Tamiment customers. This conversion should occur in CUPA's next base rate case;

- The current Tamiment wastewater service volumetric charge should be increased so that the average Residential customer in the Tamiment service territory experiences the system average increase authorized by the Commission in this proceeding;

- For the consolidated Utilities, Inc. of Pennsylvania Penn Estates systems, the wastewater service flat and schools rates and availability charges should be proportionately scaled back to recover the increase authorized by the Commission in this proceeding not recovered through other wastewater rates and charges;

- The current Tamiment wastewater availability charge should be moved halfway toward the consolidated charge approved by the Commission in this proceeding; and

- CUPA should adopt a Low-Income Residential volumetric charge for its Tamiment Residential wastewater customers and a Low-Income Residential flat rate for wastewater customers in the Utilities, Inc. of Pennsylvania and Penn Estates service territories, as a pilot program.

These recommendations are based on cost of service and other generally accepted rate design principles and, at the same time, help to address the need to minimize the impact of any rate changes on customers.

Q. HOW DO YOUR RECOMMENDATIONS ADDRESS THE CONCERNS RAISED IN PUBLIC INPUT HEARING TESTIMONY AND CUSTOMERS' FORMAL COMPLAINTS?

A. To avoid rate shock for the Tamiment water system customers, I recommend moving their rates toward the rates for the consolidated system rather than making them equal to the rates for the other systems as CUPA proposed. Also, under my proposals for all of the systems, more of the increased revenue requirement will be recovered from volumetric charges instead of fixed charges, so that customers have greater ability to control their bills through conservation. For the same reason, I oppose CUPA's proposal to convert customers who currently have metered rates for wastewater service to flat rates and recommend that CUPA be required to propose metered rates for all of its wastewater customers (where usage data is available) in its next base rate case. Finally, I support CUPA's proposed discounted rate low-income residential water for water service and also recommend that CUPA provide the same type of discounted rate for wastewater service, to help make bills more affordable for those customers and mitigate the impact of the increase. I recommend that both be approved on a pilot basis so that the program can be evaluated and changed in the next base rate case as appropriate, after some experience.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. Including this introductory section, my testimony is divided into three sections. In the following section, I address CUPA's water COS study and rate design proposals. In the final section of my testimony I address CUPA's wastewater COS study and rate design proposals.

II. WATER COST ALLOCATION AND RATE DESIGN

Q. BRIEFLY DESCRIBE THE WATER COS STUDY PREPARED BY CUPA.

A. The water COS study prepared by CUPA utilizes the Base-Extra Capacity method. This is an industry standard which is described in the American Water Works Association's ("AWWA") Principles of Water Rates, Fees and Charges ("AWWA M1 Manual"). The COS study is sponsored by CUPA witness Scott A. Miller.

Q. DID YOUR REVIEW OF THE WATER COS STUDY REVEAL ANY CONCERNS?

A. No. I found the water COS study to be reasonable.

Q. PLEASE DESCRIBE CUPA'S WATER RATE DESIGN PROPOSALS IN THIS PROCEEDING.

A. As previously explained, CUPA provides water service in three service territories: Westgate, Penn Estates, and Tamiment. The rates for the Westgate and Penn Estates service territories are consolidated in that the same rates are currently applicable to customers in both service territories.[1] The rates for the Tamiment service territory differ from those of the consolidated rates applicable to customers in the Westgate and Penn Estates service territories. In this proceeding CUPA is proposing to consolidate

[1] Rate consolidation occurred over two rate cases following the 2015 merger of the systems into Community Utilities of Pennsylvania, Inc. Docket No. R-2016-2538660, Settlement ¶14(b) (Westgate and Penn Estates fixed customer charges for water service were set at the same rate); Docket Nos. R-2019-3008947, R-2019-3008948, Settlement ¶C.24-25 (both fixed and volumetric water and wastewater rates were unitized).

the Tamiment rates with the rates for Westgate and Penn Estates, which would result in the same rates for all three service territories. CUPA's current rates for water service consist of a fixed customer charge which varies based on meter size and a volumetric usage charge.[2] In addition to these rates, CUPA assesses a fixed availability charge to customers in the Penn Estates and Tamiment service territories that own lots without buildings where water service is available. CUPA Exhibit AWD-2, sponsored by CUPA witness Mr. Andrew W. Dickson, identifies CUPA's existing and proposed rates for water service. As indicated in the response to Office of Small Business Advocate interrogatory Set I, No. 2, to be consistent with Section 1328 of the Public Utility Code, CUPA will be revising its proposed rates in rebuttal testimony to limit the increase to public fire protection rates to 25 percent of the cost of service. Also, as indicated in CUPA Exhibit AWD-2 and discussed in the direct testimony of Mr. Dickson, the Company is proposing a Low-Income Residential volumetric usage charge.

Q. WHAT ARE SOME OF THE PRINCIPLES OF A SOUND RATE DESIGN?

A. A sound rate design should:

- Utilize class cost-of-service study results as a guide;
- Provide stability and predictability of the rates themselves, with a minimum of unexpected changes that are seriously adverse to ratepayers or the utility (gradualism);
- Yield the total revenue requirement; and
- Provide for simplicity, certainty, convenience of payment, understandability, public acceptability, and feasibility of application, and reflect fairness in the apportionment of the total cost of service among the various customer classes.[3]

[2] Westgate and Penn Estates customers are currently billed monthly and Tamiment customers are currently billed quarterly. CUPA is proposing to bill all customers on a monthly basis.

[3] Principles of Public Utility Rates, Second Edition, James C. Bonbright, Albert L. Danielsen, David R. Kamerschen; Public Utility Reports, Inc. 1988, pages 383-384.

Q. SHOULD CUPA'S PROPOSAL TO CONSOLIDATE THE WATER RATES OF THE TAMIMENT SERVICE TERRITORY BE ADOPTED?

A. No, not at this time. In this proceeding CUPA is proposing to increase water rates by an average of 36.8 percent across all three systems. Under CUPA's proposal to consolidate rates, an average Residential customer in the Tamiment service territory using approximately 3,000 gallons per month would experience a rate increase of 81 percent, or 2.2 times the system average increase. While there is no hard and fast rule with respect to applying the concept of gradualism, typically an increase of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. A rate increase of 81 percent is not consistent with the concept of gradualism. Therefore, at this time, I recommend that the Tamiment volumetric usage charges be moved 70 percent toward the volumetric usage charge that would have been applicable on a consolidated basis.

For example, based on its requested increase, CUPA is proposing a consolidated Residential volumetric usage charge of $11.946 per 1,000 gallons, and the current Tamiment Residential volumetric usage charge is $5.13 per 1,000 gallons. If the proposed consolidated Residential usage charge were adopted in this proceeding, moving the current Tamiment Residential usage charge to 70 percent of the consolidated charge would result in a charge of $9.901 per 1,000 gallons. All else being equal, for the average Tamiment Residential customer using 3,000 gallons per month, the increase would be 63 percent or 1.7 times the system average increase. When combined with my subsequently discussed recommendation to maintain all current customer charges, the average Tamiment Residential customer would experience a rate increase of approximately 1.5 times the system average increase which is consistent with the concept of gradualism. To be clear, this is calculated at the Company's

proposed revenue requirement. I discuss my recommendations for how rates should be scaled back in the event that the Commission awards CUPA an increase which is less than its requested increase below.

In addition, the current Tamiment availability charge is $20.90 per quarter, or $7.63 per month. CUPA is proposing a monthly Tamiment availability charge of $15.43 per month, or an increase of 100 percent. CUPA is proposing to decrease the availability charge in the consolidated service territories from $18.81 per month to $15.43 per month. To provide for gradualism, I recommend that the existing Tamiment availability charge be moved 55 percent toward the proposed charge, and the current consolidated availability charge be maintained. Based on CUPA's requested rate increase, my recommendation would increase the Tamiment availability charge to $11.92, or 56 percent. Consistent with my recommendation concerning Tamiment Residential water service charges, this would result in a 1.5 times system average increase in the Tamiment availability charge. Again, this increase is calculated assuming the Company receives its full revenue requirement request.

Q. SHOULD CUPA'S PROPOSED INCREASES IN THE CUSTOMER CHARGES BE APPROVED?

A. No. Cost based customer charges are presented on page 16 of CUPA Exhibit SAM-1 (Revised) which is sponsored by Mr. Miller. As shown there, the existing customer charges already exceed cost based charges. For example, for the Westgate and Penn Estates service territories, the current 5/8 inch meter charge is $17.25 per month and a cost based charge would be $14.80 per month. I would note that the current Tamiment charge of $54.55 shown on page 16 of Mr. Miller's exhibit is actually a quarterly charge. On a monthly basis, this is $18.18, which also exceeds cost based charges. I recommend that all current water service monthly charges be maintained and not

increased as proposed by CUPA. I agree with CUPA's proposal to convert the Tamiment customer charge from a quarterly to a monthly charge.

Q. HOW SHOULD RATES BE SCALED BACK IF CUPA IS AUTHORIZED A WATER RATE INCREASE WHICH IS LESS THAN ITS REQUESTED INCREASE?

A. In the event that CUPA is authorized an increase that is less than its requested increase, I recommend that CUPA's proposed volumetric usage and availability charges be proportionately scaled back before applying my rate design recommendations.

Q. SHOULD CUPA'S PROPOSED LOW-INCOME RESIDENTIAL VOLUMETRIC CHARGE BE APPROVED?

A. Yes. CUPA's proposed Low-Income Residential volumetric charge should be approved as a pilot program. In CUPA's next base rate proceeding, the Company should identify the number of customers participating in the program and the volumetric usage of those customers so that the OCA and other parties can evaluate the program and recommend appropriate changes.

III. WASTEWATER COST OF SERVICE AND RATE DESIGN

Q. BRIEFLY DESCRIBE THE WASTEWATER COS STUDY PREPARED BY CUPA.

A. The wastewater COS study prepared by CUPA is based on the U.S. Environmental Protection Agency's ("EPA") User Charge System. As explained by Mr. Miller who also sponsors this COS study, the User Charge System was originally developed and required by the EPA for wastewater projects receiving federal grant funding during the construction grants program of the 1980s.

Q. DID YOUR REVIEW OF THE WASTEWATER COS STUDY REVEAL ANY CONCERNS?

A. No. I found the wastewater COS study to be reasonable.

Q. PLEASE DESCRIBE CUPA'S WASTEWATER RATE DESIGN PROPOSALS IN THIS PROCEEDING.

A. All customers in the consolidated Utilities, Inc. of Pennsylvania and Penn Estates service territories, except schools and availability customers, are currently assessed the same fixed monthly rate for wastewater service. Schools are currently assessed a fixed per student charge and availability customers in the Penn Estates service territory are assessed a fixed monthly charge. Wastewater customers in the Tamiment service territory are currently assessed a fixed quarterly customer charge and a volumetric usage charge based on water usage. Availability customers in the Tamiment service territory are currently assessed a quarterly fixed charge. In this proceeding, CUPA is proposing to consolidate the rates for all three service territories and charge all customers, except schools and availability customers, a single monthly fixed charge. Schools would continue to be assessed a fixed per student charge and the same fixed charge would be applicable to all availability customers. CUPA WW Exhibit AWD-2, sponsored by CUPA witness Mr. Dickson, identifies CUPA's existing and proposed rates for wastewater service.

Q. DO YOU RECOMMEND ANY CHANGES TO THE PROPOSED RATE DESIGN FOR THE CUSTOMERS IN THE CONSOLIDATED UTILITIES, INC. OF PENNSYLVANIA AND PENN ESTATES SYSTEMS?

A. With the exception of adopting a Low-Income Residential wastewater rate for the consolidated systems as discussed later in my testimony, I am not proposing to change the rate design for the consolidated systems. I would note that the rate increase for the

consolidated systems will be lessened if the Commission adopts the OCA's recommendations for no increase or a lesser revenue requirement increase. Below, I further discuss how a scale back should be applied to rates.

Q. SHOULD CUPA'S PROPOSAL TO CONSOLIDATE THE WASTEWATER RATES OF THE TAMIMENT SERVICE TERRITORY BE ADOPTED?

A. No. As I noted, customers in the consolidated Utilities, Inc. of Pennsylvania and Penn Estates service territories are currently charged fixed (flat) rates. Customers in the Tamiment service territory should continue to be assessed a volumetric charge based on water usage. They should not be moved from volumetric to flat rates because that would be inconsistent with the Commission's policy of eliminating minimum allowances and moving utilities toward metered rates. There is no basis for the Company's proposal. Under flat rates customers are not billed for their actual use of CUPA's wastewater system and, therefore, flat rates are inconsistent with cost of service principles. For the Tamiment service territory, I recommend that the current fixed quarterly charges, converted to monthly charges, be maintained, and the current volumetric charge of $13.73 per 1,000 gallons be increased so that the average Residential customer in the Tamiment service territory using 3,000 gallons of water per month would experience the system average increase authorized for CUPA by the Commission in this proceeding. The rate increase proposed by CUPA for the average Residential customer in the Tamiment service territory is 19 percent. Under my rate design recommendation, based on CUPA's requested increase of 37.9 percent, the volumetric charge would increase from $13.73 to $18.93 per 1,000 gallons.

I recommend that CUPA convert customers in the Utilities, Inc. of Pennsylvania and Penn Estates service territories that are currently charged flat rates move to metered rates (made up of fixed and volumetric charges similar to the charges assessed to

Tamiment customers). Since water and wastewater flows are highly correlated, maintaining and extending volumetric charges will better promote cost-based rates for customers.[4] CUPA currently provides water service to wastewater customers in the Penn Estates service territory, so water usage data is currently available to for these customers. Customers in the Utilities Inc. of Pennsylvania service territory are currently provided water service by Aqua Pennsylvania. Therefore, CUPA should obtain water usage data for these customers from Aqua Pennsylvania, if usage data is available. I recommend that CUPA be required to propose metered rates (made up of fixed and volumetric charges) for Utilities Inc. of Pennsylvania and Penn Estates customers in its next base rate filing.

With respect to availability charges, the current Tamiment availability charge is $22.90 per quarter, or $7.63 per month. CUPA has proposed a $22.91 per month availability charge for the Tamiment service territory which is an increase of 200 percent. Based on CUPA's requested increase, my recommendation would be to increase the Tamiment service territory availability charge from $7.63 to $15.26 per month, or 100 percent. While an increase of 100 percent would be more than the 2.0 times the system average increase, in terms of total dollars, my recommended increase would be less than $2.00 per month per customer.

Q. HOW SHOULD RATES FOR CUSTOMERS IN ALL SYSTEMS BE SCALED BACK IF CUPA IS AUTHORIZED A WASTEWATER RATE INCREASE WHICH IS LESS THAN ITS REQUESTED INCREASE?

A. In the event that CUPA is authorized an increase that is less than its requested increase, the Tamiment volumetric charge should be adjusted so that the average Residential

[4] The Water Environment Federation's *Financing and Charges for Wastewater System* Manual of Practice No. 27 notes that "Because direct metering of wastewater volume is generally limited to large industrial or wholesale customers, it is common practice to use metered water data to estimate customer-contributed average wastewater volume units of service for the majority of customer classes," page 129.

customer in the Tamiment service territory would experience the system average increase authorized by the Commission. For the consolidated systems, I recommend a proportionate scale back of the flat and school rates and the availability charge to recover the increase authorized by the Commission in this proceeding not recovered through other rates and charges. With respect to the Tamiment availability charge, I recommend that the current Tamiment availability charge be moved halfway toward the consolidated scaled-back charge.

Q. YOU ADDRESSED CUPA'S PROPOSED LOW-INCOME RATE FOR RESIDENTIAL WATER CUSTOMERS ABOVE. DID CUPA PROPOSE A LOW-INCOME RATE FOR ITS RESIDENTIAL WASTEWATER CUSTOMERS?

A. No. In response to discovery, CUPA indicated that its reason for not proposing a low-income rate for wastewater customers (as it did for water customers) was based on consistency, customer understanding of their bills under new rates, and to consolidate the Tamiment service territory into CUPA's existing rate design.[5] As discussed above, I do not recommend consolidating rates in this proceeding or eliminating Tamiment's metered rates. The same reasons that support CUPA's proposal to mitigate water bills for its low-income Residential customers support mitigating their wastewater bills. I also note that CUPA's uncollectible rate is higher for its wastewater customers than its water customers.[6] As such, I recommend that CUPA establish a Low-Income Residential volumetric charge for the Tamiment Residential wastewater customers in this proceeding, calculated in the same manner as its proposed low-income rate for water customers after reflecting the scale back discussed above. For CUPA's low-income Residential wastewater customers in the other systems, who are not currently

[5] OCA Set IV-5.
[6] OCA Set IV-3.

charged volumetric rates, I recommend a proportionate reduction to their flat charges after reflecting the scale back discussed above. The volumetric (Tamiment) and flat rates (Utilities, Inc. of Pennsylvania and Penn Estates) for the other Residential wastewater customers should be increased proportionately to recover the revenue associated with the discount.

The Low-Income Residential wastewater rates should be approved in this proceeding as a pilot program. In CUPA's next base rate proceeding, the Company should identify the number of customers participating in the program and the volumetric usage of those customers in the Tamiment system, so that the OCA and other parties can evaluate the program and recommend appropriate changes.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts set forth in my Direct Testimony, OCA Statement 3, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 13, 2021
*315574

Signature: Jerome D. Mierzwa

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 4

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket Nos. R-2021-3025206 (water)
	:	R-2021-3025207 (wastewater)
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	:	

DIRECT TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 13, 2021

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, Pennsylvania, 17111.

Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a self-employed consulting engineer retained by the Office of Consumer Advocate (OCA) for the purposes of providing testimony in this proceeding.

Q. PLEASE DESCRIBE YOUR BACKGROUND AND QUALIFICATIONS.

A. Appendix A, which is attached to this testimony, describes my educational background and applicable experience.

Q. WHAT ISSUES HAVE YOU BEEN ASKED TO INVESTIGATE REGARDING THE COMMUNITY UTILITIES OF PENNSYLVANIA, INC. (CUPA OR COMPANY) RATE CASE?

A. The OCA requested that I investigate issues related to the quality of service provided by the Company.

Q. WHAT DID YOUR INVESTIGATION CONSIST OF?

My investigation included: (1) reviewing applicable portions of CUPA's Filing and the Direct Testimony of CUPA witnesses J. Bryce Mendenhall, Perry Brown, and David Clark; (2) reviewing customer complaints received by CUPA; (3) reviewing formal complaints filed by CUPA customers with the PUC; (4) reviewing CUPA's responses to the OCA's Interrogatories regarding quality of service issues; (5)

reviewing applicable DEP Permits and correspondence; (6) reviewing the Company's Annual Water Quality Reports for 2019 and 2020; (7) reviewing the transcript of the Public Input Hearing on June 29, 2021 and (8) inspecting some of the Company's water and wastewater facilities on August 5, 2021.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. I will address CUPA water service and wastewater service, in that order.

WATER SERVICE

Q. WHAT QUALITY OF SERVICE ISSUES ARE INCLUDED IN YOUR TESTIMONY?

A. Unaccounted for Water (UFW), Exercising Isolation Valves, Low and High Pressures, Customer Complaints about mold in Westgate, an outage in Penn Estates and the Company's communications with customers, and in both Penn Estates and Tamiment: water staining or damaging laundry, fixtures and appliances, being discolored or having an unpleasant taste or smell that causes customers not to cook or drink with it.

Q. BRIEFLY DESCRIBE THE COMPANY'S WATER FACILITIES.

A. The Company has three separate water systems – Penn Estates, Utilities Inc., Westgate (UIW or Westgate) and Tamiment.

Penn Estates System. The Penn Estates system serves a residential subdivision located in Monroe County, Pennsylvania. As of December 2020, there were

approximately 1,722 residential and seven commercial connections served by the water company[1]. Water is supplied by seven (7) deep wells that were drilled between 1976 and 2007. Raw water is pumped through seven (7) well houses by submersible well pumps and treated at each well house using sodium hypochlorite and SeaQuest before entering the distribution system[2]. During 2019 and 2020, the average daily water production of the Penn Estates system varied between 0.304 million gallons per day (mgd) and 0.325 mgd.[3]

The distribution system consists of approximately 158,400 feet of 6-inch and 8-inch PVC water mains along with six water storage tanks which hold a total of approximately 648,000 gallons.[4] Customer service connections are primarily copper, and all are metered with new Sensus automated meters. There are 202 hydrants[5] located within the water distribution system, along with 142 isolation valves.[6]

UIW System (Westgate). The water supply source for the UIW system is from the City of Bethlehem through two metered bulk water interconnections and a separate connection for Westgate customer Patient First. As of December 2020, there were approximately 962 residential and 23 commercial connections served by the water company[7]. The water distribution system consists of 15 miles of water main[6] ranging from four-inches to ten-inches in diameter. The piping is a mixture of ductile iron, some galvanized and PVC. Service connections are primarily copper and are metered with Sensus touch-read systems. There are 78 hydrants[8] and approximately 62 gate valves. Distribution storage is provided by the Bethlehem system.

[1] 2020 Chapter 110 Reports attached to CUPA's 2020 Annual Report to the PUC after p. 62 (2020 Ch. 110 Reports).
[2] OCA Set I-10.
[3] OCA Set I-7.
[4] OCA Set I-14.
[5] OCA Set I-12.
[6] 2020 DEP Water Allocation Permit Compliance Report
[7] 2020 Ch. 110 Reports.
[8] OCA Set I-12.

CUPA at Tamiment System (Tamiment). The Tamiment system serves a resort community located in Lehman Township, Pike County, Pennsylvania. As of December 2020, there were approximately 507 residential and four commercial connections served by the water company.[9] Water is supplied by three (3) wells. Well No. 1 and Well No. 2 are housed in separate buildings and have a separate feed to Tank No. 1 (125,000 gallon elevated tank). Well No. 1 water is treated with sodium hydroxide and sodium hypochlorite. Well No. 2 is not in use. Well No. 3 is also housed in a separate building, treated with sodium hydroxide and sodium hypochlorite and maintains the water level in Tank No. 3 (350,000 gallon tank). CUPA acquired this system on June 25, 2019 and on September 20, 2020 has been issued a DEP Construction Permit to construct a new treatment building for Well No. 1 and replace the existing facilities to treat Well No. 1 water. The proposed facilities will by-pass Tank No. 1 and connect directly into the distribution system. The existing Well No.1 and Well No. 2 buildings will be demolished.[10]

Unaccounted for Water

Q. WHAT IS MEANT BY THE TERM "UNACCOUNTED FOR WATER"?

A. There are several different procedures for calculating Unaccounted for Water. The PUC Method is shown on Section 500 of the PUC Annual Report Form for Public Water Utilities. According to the PUC procedure, UFW is equal to "Total Water Delivered for Distribution & Sale" minus "Total Sales" minus "Non-Revenue Usage and Allowance." "Non-Revenue Usage and Allowance" includes "Main Flushing," "Blow-off Use," "Unavoidable Leakage," "Located & Repaired Breaks in Mains & Services" and "Other".

[9] 2020 Ch. 110 Reports.
[10] PWS Construction Permit 5220511.

Q. WHY IS UFW IMPORTANT?

A. Calculating the amount of UFW is a method of estimating the amount of non-revenue water in a water distribution system due to leaks and inaccurate meter readings. Reducing the non-revenue water saves money in chemical and power costs and provides for important water conservation in areas that have limited water supply sources. The accuracy of the UFW estimate depends on reliable estimates of unavoidable non-metered water uses such as flushing the distribution system, firefighting, normal pipe leakage, repaired main breaks, etc. Keeping track of UFW gives a water utility an indication of the extent of unknown leaks in the distribution system so that informed decisions can be made on the necessity of finding and repairing leaks. The Water Audit methodology established by the International Water Association (IWA) and the American Water Works Association (AWWA) is generally becoming a more accepted method of identifying the amounts of wasted water – Non-Revenue Water (NRW). Both the PUC and AWWA Methods, if properly utilized, provide water utilities with information needed to improve operational efficiency. According to 52 Pa. Code § 65.20(4), "Levels of unaccounted-for water should be kept within reasonable amounts. Levels of UFW above 20% have been considered by the Commission to be excessive." The Commission has not set similar standards for levels of NRW.

Q. HAS CUPA PROVIDED INFORMATION ON HOW IT CALCULATES UFW?

A. Yes. In response to OCA-I-8, the Authority estimated the UFW for each of its three systems as:

Penn Estates: 2019 = 26.8% & 2020 = 17.69%

Westgate: 2019 = 13.4% & 2020 = 9.15%

Tamiment: 2020 = 56.01%

CUPA also submitted PUC Form 500 that estimates that all three systems have an UFW = 23.2 % for 2020 that would have been lower if the Company included an estimate for unavoidable leakage.

Copies of CUPA's UFW submittals are attached as Exhibit TLF-W1.

Q. DO YOU HAVE ANY COMMENTS ON THE UFW INFORMATION PROVIDED BY CUPA?

A. Yes. In future rate cases CUPA should submit an individual PUC Form 500 for each of its systems as other utilities that have multiple systems have agreed to do. This will be used for comparison with future submittals to determine progress in reducing UFW, especially in the Tamiment system.

<u>Isolation Valves</u>

Q. WHAT ARE ISOLATION VALVES?

A. Isolation valves are installed on water mains so that the water can be shut off in sections of the distribution system in case of a water main break or for main repairs and replacements. Isolation valves are also used to separate different pressure zones.

Q. WHY IS IT IMPORTANT TO EXERCISE ISOLATION VALVES?

A. It is important to exercise isolation valves to prevent the valves from seizing-up and getting stuck from corrosion or other deposits adjacent to the valve. An isolation valve that cannot be fully closed will increase the water loss during a water main break and increase the number of customers affected.

Q. WHAT HAPPENS IF AN ISOLATION VALVE BECOMES INOPERABLE DUE TO LACK OF BEING EXERCISED?

A. The valve either has to be repaired or replaced. Isolation valves are generally in pavement and that makes it very expensive to repair or replace. Even repairing the valve requires that the valve be exposed so that interior parts can be removed and replaced.

Q. WHAT DOES IT MEAN TO EXERCISE ISOLATION VALVES?

A. Exercising an isolation valve is operating the valve through complete full open/close cycles until it operates with little resistance. This requires some effort even for a well-maintained valve because the number of turns to fully open or close an isolation valve can vary from 12 turns for a 3-inch valve to 38 turns for a 12-inch valve.

Q. HOW OFTEN SHOULD AN ISOLATION VALVE BE EXERCISED?

A. According to The National Environmental Services Center at West Virginia University, experts recommend exercising the valves annually, if possible, or at least once every two years.[11]

According to AWWA, "Each valve should be operated through a full cycle and returned to its normal position on a schedule that is designed to prevent a buildup of tuberculation [rust formation in pipes as a result of corrosion] or other deposits that could render the valve inoperable or prevent a tight shutoff. The interval of time between operations of valves in critical locations or valves subjected to severe operating conditions should be shorter than for other less important installations but can be whatever time period is found to be satisfactory based on local experience."[12]

Q. WHAT INFORMATION DID CUPA PROVIDE REGARDING EXERCISING ISOLATION VALVES?

A. In response to OCA-I-24, CUPA indicates that it: (1) has a total of 578 isolation valves (in the Penn Estates and Westgate Systems); (2) is keeping records on exercising the isolation valves since the last rate case; (3) has exercised 495 different valves during the past three years; and (4) intends to locate and exercise the isolation valves in the Tamiment System during 2021. See Exhibit TLF-W2.

[11] Tech Brief, Valve Exercising, 2007, Vol. 7, Issue 2, The National Environmental Services Center of West Virginia University, Morgantown, WV

[12] American Water Works Association. 1996. Manual of Water Supply Practices, Denver: AWWA

Q. DID CUPA'S RESPONSE TO OCA-1-24 SPECIFICALLY STATE THAT ALL ATTEMPTS TO EXERCISE EACH ISOLATION VALVE WERE SUCESSFUL?

A. No. CUPA implied as such by not submitting a schedule for repair and replacement.

Q. WHAT SHOULD CUPA DO CONCERNING EXERCISING ISOLATION VALVES?

A. For each of its water systems, CUPA's records should include (1) the valve location, (2) date of attempt to exercise each valve; and (3) if the valve was broken or operable (successfully exercised). If the valve could not be properly exercised, the valve should be scheduled to be repaired or be replaced. As part of its next rate case filing, CUPA should furnish the OCA and other parties a report on the exercising records and schedule of any repair/replacements.

Pressure Surveys

Q. WHAT ARE THE PUC'S REQUIREMENTS FOR WATER PRESSURE?

A. As shown below, 52 Pa. Code § 65.6 requires normal operating pressures of not less than 25 psig[13] nor more than 125 psig at the water main.

§ 65.6. Pressures.

(a) *Variations in pressure.* The utility shall maintain normal operating pressures of not less than 25 p.s.i.g. nor more than 125 p.s.i.g. at the main, except that during periods of peak seasonal loads the pressures at the time of hourly maximum demand may be not less than 20 p.s.i.g. nor more than 150 p.s.i.g. and that during periods of hourly minimum demand the pressure may be not more than 150 p.s.i.g. A utility may undertake to furnish a service which does not comply with the foregoing specifications where compliance with such specifications would prevent it from furnishing adequate service to any customer or where called for by good

[13] "pounds per square inch gauge," or gage. PSIG units are relative to atmospheric pressure. The air surrounding Earth exerts pressure on all objects on the surface of the planet. At sea level, this pressure is 14.7 pounds for every square inch column of air.

engineering practices. The authority of the Commission to require service improvements incorporating standards other than those set forth in this subsection when, after investigation, it determines that such improvements are necessary is not hereby restricted.

(b) *Pressure gauges.* Within 2 years after the effective date of this section, each utility shall obtain one or more recording pressure gauges for each separately operated pressure zone for the purpose of making pressure surveys as required by this section. These gauges shall be able to record the pressure experienced on the zones and shall be able to record a continuous 24-hour test. Each utility serving 1,000 or more customers or 1,000 or more customers in any separately operated zone of a multi-zone utility shall maintain one or more of these recording pressure gauges in service at some representative point or points in each of the pressure zones of the utility.

(c) *Telemetering.* An utility may make the pressure surveys required by this section by means of telemetered information electronically transferred to printed copy instead of using recording pressure gauges.

(d) *Pressure surveys.* At regular intervals, but not less than once each year, each utility shall make a survey of pressures in its distribution system of sufficient magnitude to indicate the pressures maintained at representative points on its system. The surveys should be made at or near periods of maximum and minimum usage. Records of these surveys shall show the date and time of beginning and end of the test and the location at which the test was made. Records of these pressure surveys shall be maintained by the utility for a period of at least three years and shall be made available to representatives, agents, or employes of the Commission upon request.

Notes of Decisions

Adequate Pressure

The 25 p.s.i.g. minimum expressed in subsection (a) is not intended to restrict the authority of the PUC to order improvements where service is inadequate; therefore, the PUC has the power to order needed improvements notwithstanding that the pressure in a utility's main meets the standard of the regulation. *Barone v. Pennsylvania Public Utility Commission*, 485 A.2d 519 (Pa. Cmwlth. 1984).

Q. WHAT ARE THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (DEP) REQUIREMENTS FOR SYSTEM PRESSURES?

A. According to DEP's Public Water Supply Manual, Part II, Community System Design Standards:

1. Pressure

All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. The pipe system and its appurtenances shall be designed to maintain a minimum pressure of 20 pounds per square inch, gauge (psig) at ground level at all points in the distribution system under all conditions of flow. The

normal working pressure in the distribution system should be approximately 60 psig.[14]

Q. WHAT ARE THE DIFFERENCES BETWEEN THE PUC AND DEP PRESSURE REQUIREMENTS?

A. The PUC has a maximum and minimum pressure criterion while DEP has a minimum and normal working pressure criterion. The PUC has a minimum criterion of 25 psi at the main while DEP's minimum criteria is 20 psi at ground level. Assuming the main is buried 4.5 feet below ground, DEP minimum criteria is equivalent to 22 psi at the main.

Instead of having a pressure survey requirement for all water systems, DEP imposes a pressure survey requirement on specific systems with known pressure problems.

Q. WHAT ARE THE REPRESENTATIVE POINTS ON THE SYSTEM WHERE PRESSURE SURVEYS SHOULD BE CONDUCTED?

A. In general, the representative points are highest and lowest ground elevations of the distribution system in each pressure zone.

Q. DID CUPA PROVIDE PRESSURE SURVEY DATA ON ITS SYSTEMS?

A. Yes. In response to OCA-I-22, CUPA provided a list of pressures taken at each of its systems. See Exhibit TLF-W3. As can be noted from Exhibit TLF-W3, the

[14] Public Water Supply Manual, Part II, Community System Design Standards, May 6, 2006, p. 186-187.

following locations in the Penn Estates system are a concern because of low or high pressures:

Low Pressure: 5 to 10 psi at Hydrant 145; 5 to 15 psi at Hydrant 143; 20 psi to 40 psi at Hydrant 181.

High Pressure: 126 to 138 psi at Hydrant 81; 134 psi at Hydrant 124; 136 psi at Hydrant 125; 138 psi at Hydrant 123; 128 psi at Hydrant 71; 134 psi at Hydrant 51; 130 psi at Hydrant 70.

Q. HAS THE COMPANY COMPLETED ANY PROJECTS THAT HAVE INCREASED PRESSURES TO THE LOW PRESSURE AREAS?

A. Not that I am aware of.

Q. DO YOU HAVE ANY CONCERNS ABOUT THE PRESSURE SURVEY DATA SHOWING LOW PRESSURES?

A. Yes. Some of the reported pressures are extremely low and could indicate that nearby areas may be subject to negative pressures during periods of high demands, flushing, fires, etc. Negative pressures will allow contaminated ground water to enter the water mains at pipe joints and unrepaired leaks. Even very low pressures are a problem, because they impair customers' ability to use the water for daily needs, like cleaning.

Q. WHAT STEPS CAN BE TAKEN REGARDING LOW PRESSURES IN THE PENN ESTATES SYSTEM?

A. Yes. The Company should have its engineer make any recommendations that are necessary to comply with DEP's minimum pressure of 20 pounds per square inch,

gauge at ground level at all points in the distribution system under all conditions of flow. The engineer's recommendations should be submitted to the OCA and the parties within one-year.

Q. DO YOU HAVE ANY CONCERNS ABOUT THE PRESSURE SURVEY DATA SHOWING HIGH PRESSURES IN THE PENN ESTATES SYSTEM?

A. Yes. High pressures can cause damage to customer service lines and also the inside plumbing if the pressure reducing valve installed inside the building fails. Also, higher pressure results in larger volumes of unavoidable pipeline leakage and during pipeline and service line breaks.

Q. WHAT STEPS CAN BE TAKEN REGARDING HIGH PRESSURES?

A. Yes. CUPA should reduce normal operating pressures exceeding 125 psi in its mains. If it is impossible to reduce the main pressure, the Company should install a pressure reducing valve upstream of the customer's service line.

The Company should be responsible for all damages to customer facilities where the normal operating pressures exceed 125 psi unless it installs a pressure reducing valve approved for water supply with the applicable pressure upstream of the customer's service line.

<u>Customer Complaints Regarding the Water System</u>

Q. WHAT COMPLAINTS ARE YOU GOING TO ADDRESS?

A. The complaints listed in CUPA's Customer Complaint Logs for the years 2019, 2020 and 2021 (through May 24, 2021), Formal Complaints filed with the PUC, and testimony by witnesses at the Public Input Hearing, related to water service.

Q. WHAT ARE THE COMMISSION'S REGULATIONS REGARDING COMPLAINTS?

A. See 52 Pa. Code § 65.3. Complaints, shown below:

> (a) *Investigations.* A public utility shall make a full and prompt investigation of complaints made by the Commission or by others, including customers, relating to service or facilities.
> (b) *Records of complaints.* A public utility shall preserve for a period of at least 5 years, written service complaints showing the name and address of the complainant, the date and character of the complaint and the final disposition of the complaint.
>
> **Authority**
>
> The provisions of this § 65.3 issued under the Public Utility Code, 66 Pa. C.S. § § 317, 501, 504, 506, 1301, 1304, 1501, 1502, 1503, 1504, 1507, 1508, 1701, 1702 and 1704.
>
> **Source**
>
> The provisions of this § 65.3 adopted March 25, 1946; amended August 15, 1980, effective August 16, 1980, 10 Pa.B. 3356. Immediately preceding text appears at serial page (21014).

Q. WHAT DOES YOUR REVIEW OF THE COMPANY'S CUSTOMER COMPLAINT LOGS CONSIST OF?

A. The Company submitted a customer complaint/call log for each water and wastewater system on a live Excel spreadsheet which I sorted in a manner to determine if there were several complaints regarding the same issue that occurred around the same place and time.

Penn Estates Water System

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS PENN ESTATES SYSTEM?

A. Yes. See Exhibit TLF-W4 for a summary of the Complaint Log for the Penn Estates Water System.[15]

Q. DID YOU NOTICE SOME COMPLAINTS IN THAT LOG THAT THE COMPANY SHOULD ADDRESS?

A. Yes. There are three categories of complaints that the Company should address: (1) discolored water due to wells pumping air[16]; (2) water trucked/delivered to distribution storage tanks; and (3) customers' complaints of illness caused by the water.

Q. WHY SHOULD THE COMPANY PROVIDE MORE INFORMATION ON DISCOLORED WATER DUE TO WELLS PUMPING AIR?

A. The Company responded to 24 discolored water complaints by indicating that one or more wells were drawing air into the distribution system. These complaints occurred over a year and are an indication that the system may not have sufficient reliable sources of supply and at least one of its wells could not supply sufficient water. The dates of the complaints are shown below.

- 10/01/2019 thru 10/20/2019 – 4 complaints (Well #4).
- 06/25/2020 thru 10/27/2020 – 7 complaints (Well #4).

[15] OCA Set I-19 (Water)(confidential). I note that this response was marked confidential to protect customers' identifying information. My testimony and exhibits based on this response only present aggregate, non-customer specific information and are not confidential.

[16] During the pumping cycle, air is pumped into the distribution system due to the water table being too low.

- 02/18/2020 – 1 complaint (unnamed well).
- 11/19/2020 thru 11/05/2020 – 9 complaints (unnamed well).

Q. SHOULD ANY SPECIFIC INFORMATION BE INCLUDED IN THE COMPANY'S RESPONSE?

A. The Company should have its engineer: (1) explain why this is not an indication of insufficient sources of supply; (2) explain why the well pump has not been lowered; or (3) submit a time schedule for increasing the Company's source of supply by either drilling a new well or providing manganese treatment at Well #8 so that well can be used. This explanation or time schedule should be provided as part of CUPA's testimony in this proceeding.

Q. ARE THERE ANY OTHER INDICATIONS THAT THE COMPANY DOES NOT HAVE SUFFICIENT RELIABLE SOURCES OF SUPPLY?

A. Yes. First, one of the Company's wells (Well #8) has been taken off-line because of high manganese levels.[17] See Exhibit TLF-W5. According to the Company, the fate of Well #8 will be determined after an engineer pursues drilling a new well. Second, the Company declared a BWA between August 3 -13, 2020 because of water line breaks, elevated usage and empty storage tanks. See Exhibit TLF-W6. The Complaint Log contained nine customer complaints regarding dirty water that the Company noted as being due to water being trucked/delivered to Company's distribution storage tanks by tankers on July 27-28, 2020, and August 6, 2020. Testimony at the PIH indicated that dozens of tankers delivered water to at least

[17] CUPA response to OCA-I-32. According to the 2020 Chapter 110 Reports, 36,713 gallons was withdrawn from Well #8 during 2020.

one of the Company's storage tanks both before and during the Boil Water Advisory (BWA)[18].

Q. IS THERE ANY THING ELSE THE COMPANY SHOULD EXPLAIN ABOUT TRUCKING/DELIVERING WATER TO ITS DISTRIBUTION TANKS?

A. Yes. The Company should explain why it did not have to issue a BWA prior to August 3, 2020, when it was having water delivered to its tanks.

Q. HOW MANY COMPLAINTS DID THE COMPANY RECEIVE ABOUT THE WATER CAUSING CUSTOMERS TO BECOME SICK?

A. Between May 1, 2019 and May 17, 2019, the Company received 3 complaints (2 from the same address) that the water caused an illness.

Q. WHAT ADDITIONAL INFORMATION SHOULD THE COMPANY PROVIDE ABOUT THE ILLNESS COMPLAINTS?

A. The Company should provide information about the final disposition of each complaint in its testimony in this proceeding (under confidential cover, if appropriate).

Westgate Water System

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS WESTGATE WATER SYSTEM?

[18] Tr. 135-137.

A. Yes. See Exhibit TLF-W7 for a summary of the Complaint Log for the Westgate Water System.

Q. DID YOU NOTICE SOME COMPLAINTS IN THAT LOG THAT THE COMPANY SHOULD ADDRESS?

A. Yes. The Company should explain why there were 14 complaints about mold, specifically black mold and staining between 09/24/2019 thru 11/15/2019, 2 similar complaints between 09/15/2020 thru 11/03/2020, and none so far in 2021. It should be noted that all of the water supplied to Westgate is treated by the City of Bethlehem.

Tamiment Water System

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS TAMINMENT WATER SYSTEM?

A. Yes. See Exhibit TLF-W8 for a summary of the Complaint Log for the Tamiment Water System.

Q. WAS THERE ANYTHING IN THE COMPANY'S TAMIMENT COMPLAINT LOG THAT SHOULD BE ADDRESSED FURTHER?

A. No.

Formal Complaints regarding Quality of Service

Q. PLEASE DISCUSS THE FORMAL COMPLAINTS MADE BY THE COMPANY'S CUSTOMERS REGARDING THE TAMIMENT SYSTEM?

A. The following seven Formal Complaints were filed by customers of the Company's Tamiment Water System:

- David F. (Ravenhill Road), complained that the Company violated Pennsylvania law for water quality standards and monitoring per the 2019 and 2020 Annual Water Quality Reports.
- Louis R. (Old Took Drive), complained that the quality of the water is so horrible that they won't consume it and has to have water delivered to his home.
- William and Dahlia M. (Chico Lane), complained of poor quality water, low pressure, and damage to numerous appliances due to hard water.
- Jean S. (Carrock Way), complained of low pressure and does not drink the water because it has a metallic taste.
- Amos and Kathleen L. (Tom Noddys Drive), complained that the water pressure is very low and at times has a peculiar odor.
- Roger F. (Galion Drive), complained that the water has a metallic taste and he purchases other water to drink and cook with.
- Marcia M. (Clicko Lane), complained that the water is consistently brown and the pressure is low.

Q. IN RESPONSE TO THE CUSTOMER ON RAVENHILL ROAD, HAS CUPA VIOLATED ANY DRINKING WATER STANDARDS OR MONITORING REQUIREMENTS?

A. Yes. In response to OCA-I-3, the Company listed 16 violations of DEP primary and secondary drinking water standards in 2019 and 2020. Four of those violations were in the Tamiment system for failure to monitor, report or properly collect samples. Roughly 11 violations were in the Penn Estates system, for not issuing public notifications and failure to monitor, report or properly collect

samples. One of those was for failure to issue a Tier 1 public notification.[19] Two violations were in the Westgate system, for failure to monitor/report. See Exhibit TLF-W9.

Q. DO YOU HAVE ANY COMMENTS ON THE QUALITY OF SERVICE ISSUES RAISED IN THE OTHER FORMAL COMPLAINANTS BY CUSTOMERS IN THE TAMIMENT SYSTEM?

A. Yes. As I discuss below, other Tamiment customers raised similar concerns during the Public Input Hearing (PIH). I will provide my comments as part of that discussion.

PIH Customer Complaints regarding Quality of Service

Q. DID ANY CUSTOMERS RAISE QUALITY OF SERVICE ISSUES AT THE PUBLIC INPUT HEARING HELD ON JUNE 29, 2021?

A. Yes. Thirty-nine customers and three state representatives testified at the public input hearing. Based on my review of the transcript, the following customers testified about water-specific quality of service issues:

Westgate Water System

- Jeffrey V., Bel Air Road, testified that the Company provides reactionary maintenance instead of preventative maintenance; doesn't maintain the grounds around the storage tank; doesn't open and close valves; repaired a weekend main break on the following Monday; repaired its own driveway prior to a customer's driveway and hasn't touched a shut off valve on his lawn. Tr. 67-70.

[19] DEP Public notice requirements "are divided into three tiers, to take into account the seriousness of the violation or situation and any potential adverse health effects that may be involved. . . Tier 1 public notice. Required for violations and situations specified in subsection (a) with significant potential to have serious adverse effects on human health as a result of short-term exposure." 25 Pa. Code § 109.407.

Penn Estates Water System

- Debra K., Mayfield Court, testified that in 2019 they had a breach on June 28th that contaminated the water for about three or four hours and did not notify customers until about July 17th. During that period, she ingested contaminated water or food and developed an autoimmune disease. She no longer drinks or cooks with the tap water. She also testified about the water staining her tub and the ten day contamination period in 2020 where they had no drinking water. Tr.103-104. She ruined a good soup pot boiling water because it had a ring around it. Tr. 106.
- Michelle G., Highland Drive, testified that because of letters from the Company, they purchase other water to prevent being sick and during 2020 she could not wash her baby's bottle in the water. She testified that the water made everybody sick. Also, the water has too much sulfur and makes them very, very itchy. She has auto immune disease. They have purchased filtration systems for every shower in the house and sink. Tr. 107-111.
- George F., Summerton Circle, testified that he is on this third water heater because the water is so full of sediment. He also testified that during the summer of 2020, he watched dozens of water tankers deliver water to the water tower near his home; then after a day or two received an automated BWA; and then later was told not to drink the water. He testified that the Company did not return his call regarding the quality of the water being trucked in. They no longer drink the water. Tr. 135-137.
- David M., Spicebush Drive, testified that the Company does not notify customers of planned outages, boil advisories, and water quality concerns until after the fact. He also testified that he doesn't recall the hydrant at the bottom of his driveway being flushed during the last 10 years that he worked out of his home and the Company can't locate water leaks. Tr. 141-142.
- Robin N., Overlook, testified that the water has a lot of sediment and has broken two water heaters in four years in addition to the one when she moved in. She also testified that the water discolors white clothes and stains light colored objects. Because of brown water coming out of her faucets, the Company tried running all her faucets without success. The next day they flushed the hydrant across the street that sometimes offers a temporary improvement. She clarified her testimony by stating that the water is a problem a few times a year. Tr. 186-192.

Tamiment System

- Janine M., no address, testified about the lack of maintenance by the Company of a tank several years ago and a ring around the toilets and bathtub. Tr. 48, 50.
- Javier P., Old Took Drive, testified that the Company doesn't notify customers if they have a leak inside the house. Tr. 65.
- Maryann B., Hunters Woods Drive, testified that she when she bought her house, she spent three days trying to get her water turned on. Also, the Company charges a service fee for those paying by phone or the website. Tr. 74-75.
- Amila H., Oakenshield Drive, testified that the water is not suitable for washing her hair, taking a shower, and washing white laundry. Tr. 114-115.
- Catherine G., Swartsboro Drive, testified that she won't even use the water boiled to cook with because of sediment and a ring around the toilet. They buy a lot of bottled water, about 4 cases of 24 bottles each per week. They also buy water in larger containers for their cooler to cook with – about four bottles last a week and a half . Tr. 120-123.
- Paul K., Brandyshire Drive, testified about information contained in the Company's Annual Water Quality Report for 2020 concerning violations of improper reporting, monitoring and testing the water. He also testified that he uses bottled water, has noticed a color residue in a toilet and a slight chlorine smell. Tr. 149-153.
- Mark J., Woodyend Loop, testified that he does not have the water quality problems others have expressed because he invested in a water softener system which he spent a large amount of money on. Tr. 161.

- Greg S., Underhill Drive, testified that they drink bottled water because of the notices received about the water quality. He also testified that the water smells like chlorine. Tr. 167.
- Christopher D., Long Lake Road, testified that in the five years since buying the house, he has been through two water heaters and two grinder pumps. The elements in one of the water heaters was eaten up within six months. He testified that sulfur and chlorine works like a corrosive. Tr. 169-170.
- Michael S., Galion Drive, testified that he had to replace his hot water heater, buys extra water because he does not consume the water due to its odor, and the continued notices they receive about the Company's violations and contaminations. He testified about damaged appliances, and they all have noted skin problems that they attribute towards the water. Tr. 178-179.
- Oleg C., Brandyshire Drive, testified that he had to replace his grinder pump, that his plumbing and HVAC contractors told him about a lot of corrosion on the pipes and in the water heater, possibly due to water quality, sediment and pressure. He also testified about receiving a high bill, calling the Company who asked about a possibility of a pool, hot tub, jacuzzi, slip and slides, or leak. His property is a vacation home that he does rent out. Tr. 198-204.
- Jessica C., Bombur Lane, testified that she is on her third hot water heater in nine years, has very low water pressure, issues with all of the pipes corroding, and has replaced all the shut-off valves in the house. She also testified about replacing at least a dozen metal piece that connects to the flap at the toilet and repairing a washer that had a sensor corroded. Tr. 209-211.
- Ronald F., Condor Drive, testified that he has toilets full of brown residue every time he occasionally goes there. Tr. 222.
- Joseph B., Underhill Drive, Tamiment Water System, testified that they had to replace their grinder pump, use bottled water and have a ring around the toilet. Tr. 232.
- Jennifer R., Old Took Drive, testified that she is constantly cleaning due to water sediment around the faucet rings and stuff, can't wash white laundry, and has 5 gallon jugs of water delivered. She also testified that she has a DTS (total dissolved solids) reader and it read over 600 both at her present house and previously when living in a rental property on the same system down a year ago. She only uses the Company's water for bathing and cleaning dishes. They usually get seven 5-gallon jugs of water per month. Tr. 235-237.

Q. WHAT SHOULD CUPA DO CONCERNING THE CUSTOMER COMPLAINTS RAISED AT THE PIH AND IN FORMAL COMPLAINTS?

A. Customers raised issues about the quality of water they receive from the Company. The Company must ensure that it provides drinking water to customers that is suitable for household purposes, including drinking, cleaning, and cooking. The Company needs to provide additional information about the issues raised by these customers, explain what may have caused the issues, and how it intends to address the complaints.

Q. ARE THERE SPECIFIC ISSUES CONCERNING CUSTOMERS' COMPLAINTS THAT THE COMPANY SHOULD ADDRESS IN ITS TESTIMONY IN THIS PROCEEDING?

A. Yes. The Company should address the following issues:

Westgate. (1) The black mold and staining problems.

Penn Estates. (1) Low pressures below DEP's 20 psi minimum; (2) Well(s) pumping air into the distribution system over a long period of time; (3) whether the system has adequate and reliable sources of supply; (4) the cause (main breaks, empty storage tanks) of the BWA during August 2020, including the suitability of the water delivered and the tankers delivering drinking water; and (5) the subject of the DEP violation in 2019 regarding the Tier 1 notification.

The Company should provide recent laboratory tests for hardness, total dissolved solids (TDS) and sulfates[20] for each of its wells. Higher levels can cause many of the problems identified by the Penn Estates customers at the PIH and in formal complaints, such as rings and residue on fixtures, stained laundry, unpleasant taste and smell causing customers not to drink or cook with it. When water is hot, it is more corrosive. So higher levels of hardness or TDS may also explain some of the complaints about hot water tanks having a shorter service life.

[20] Hardness is not a regulated Safe Drinking Water contaminant but is a primary cause of problems with hot water heaters, appliances using hot water and cooking pots and pans. If TDS levels require treatment, however, that treatment would also significantly reduce hardness. At higher levels, TDS and sulfates can negatively affect taste, odor and appearance of water.

Tamiment. The Company should provide recent laboratory tests for total dissolved solids (TDS), sulfate and hardness[21] for each of its two wells for the same reasons discussed above for Penn Estates.

Q. SHOULD CUPA TAKE ANY OTHER ACTION?

A. Yes. CUPA should be providing timely notice to customers regarding the need to boil water or not consume, both when the requirement is instituted and when it is lifted. The Company should submit reports showing the date and time that CUPA identifies the need for an advisory, the timing and method of the related notice to customers, the date and time that CUPA determines to lift the advisory, and the timing and method of the related notice to customers. The reports should be provided to the OCA and parties every six months until CUPA files its next base rate case.

WASTEWATER SERVICE

Q. WHAT QUALITY OF SERVICE ISSUES ARE INCLUDED IN YOUR TESTIMONY?

A. I address my review of the Customer Complaint Log, Formal Complaints filed with the PUC and the transcript from the Public Input Hearing, and discuss the concerns raised by customers about Grinder Pumps.

Q. BRIEFLY DESCRIBE THE COMPANY'S WASTEWATER FACILITIES.

[21] Ibid.

A. The Company has three separate wastewater systems – Broad Run, Penn Estates and Utilities Inc., Tamiment.

Broad Run Wastewater System (Broad Run). The Broad Run wastewater system serves several residential subdivisions located just south of Downingtown in Chester County, Pennsylvania.[22]
The collection and conveyance systems consist of 103,746 feet of gravity sewer (8, 10, 15 & 18-inch), three pumping stations, 5,280 feet of force main, 505 manholes serving 1,567 residential and four commercial customer connections. The wastewater treatment plant has a permitted capacity of 0.40 million gallons per day (MGD) and consists of a fine screen, two equalization tanks, three aeration/clarifier tanks, a chlorine contact/post-aeration tank prior to discharge to the East Branch of Brandywine Creek.[23]

Penn Estates Wastewater System. The Penn Estates wastewater system serves a residential subdivision located in Monroe County, Pennsylvania. As of December 2020, there were approximately 1,722 residential and seven commercial connections served by the Company.[24]
The collection systems consist of 151,200 feet of 8, 10, and 15-inch gravity mains, 590 manholes and 1,729 customer connections. The conveyance consists of three lift stations, 4,313 feet of 4-inch force main and 2,131 feet force main from customer pumps. The wastewater treatment plant has a permitted capacity of 0.56 million gallons per day (MGD) and consists of five equalization tanks, an aeration tank, two clarifiers, four rapid sand/denitrification filters, a chlorine contact tank, and a post/air de-chlorination tank prior to discharge to an unnamed tributary of Broadhead Creek.[25]

[22] Location of address per Microsoft Maps.
[23] 2020 PUC Annual Report, Attachments after p. 63.
[24] DEP Chapter 110 Reports for Penn Estates for the Calendar Year 2020.
[25] 2020 PUC Annual Report, Attachments after p. 63.

Tamiment Wastewater System (Tamiment). The Tamiment system serves a resort community located in Lehman Township, Pike County, Pennsylvania. As of December 2020, there were approximately 507 residential and four commercial connections served by the wastewater company[26].

The collection and conveyance systems consist of 10,000 feet of 4 and 8-inch gravity mains, 50,000 feet of 2, 4 and 6-inch low pressure main, 40 manholes and three lift stations serving 511 customer connections. The wastewater treatment plant has a permitted capacity of 0.25 million gallons per day (MGD) and consists of two equalization tanks, five aeration tanks, five clarifiers, rapid mix tank, slow mix flocculation chamber, tray settler, sand filter and a chlorine contact tank. The WWTP has two discharge points. A submersible pump station conveys effluent to below First Pond for discharge to an unnamed tributary of Little Bushkill Creek. A second pumping station discharges to the First Pond from where it is discharged to a spray irrigation lagoon.[27]

Q. WHAT IS A LOW PRESSURE SEWER SYSTEM?

A. A low pressure sewer system consists of grinder pumps, basins, piping, valves and controls that grind and pump residential and municipal wastewater through small diameter pipe following the contour of ground at a depth below frost levels to a wastewater treatment plant, pump station or gravity sewer line. See Exhibit TLF-WW1 for a publication by the City of Augusta, Georgia regarding the purpose and use of grinder pumps.[28] The example is for a grinder pump discharging to a gravity sewer but it is also applicable to discharging to a low pressure sewer system.

Q. WHO OWNS THE GRINDER PUMPS?

[26] DEP Chapter 110 Reports for Tamiment Resort for the Calendar Year 2020.
[27] 2020 PUC Annual Report, Attachments after p. 63.
[28] https://www.augustaga.gov/DocumentCenter/View/6505/Grinder-Pump-FAQ?bidId

A. Typically, the customers own the grinder pumps, which are needed to pump their sewage into a low pressure sewer or a gravity sewer that is at higher in elevation than the house plumbing.

Q. HAS THE COMPANY RECEIVED ANY NOTICE OF VIOLATIONS (NOV) FROM THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION?

A. Yes. The Company received two NOVs concerning the Penn Estates System. The first was dated April 10, 2019 from DEP in regard to 16 monthly effluent violations that occurred between August 2014 and December 2018. The second one was dated September 11, 2019 in regard to an additional effluent violation during June 2019 and seven Sanitary Sewer Overflows (SSO) that occurred between March 22, 2019 and May 20, 2019.

Q. DID DEP TAKE FURTHER ACTION REGARDING THE PENN ESTATES NOVs?

A. Yes. DEP and the Company entered into a Consent Order and Agreement (CO&A) dated October 22, 2020.[29] See Exhibit TLF-WW2.

Q. WHAT CORRECTIVE ACTIONS DID THE COMPANY AGREE TO TAKE IN ACCORDANCE WITH THE CO&A?

A. The Company agreed to do the following:[30]

a. Penn Estates will install and render operational a new facility generator of sufficient capacity and an automated transfer switch capable of maintaining waste water treatment plant operational capability if primary energy source is interrupted. As of the date of this Consent Order and Agreement, Penn Estates has completed this Corrective Action measure.

[29] CUPAWW Statement No. 1, pp. 19-20.
[30] CO&A dated October 22, 2020, pp. 6-7, Attached as Exhibit TLF-1.

b. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Manhole Report) and phased manhole rehabilitation plan (Manhole Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Manhole Report shall include an evaluation of 100% of the manholes contained in the collection system with the Manhole Plan addressing manholes from highest to lowest priority.

c. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Gravity Report) and phased gravity collection main rehabilitation plan (Gravity Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Gravity Report shall include an evaluation of 100% of the gravity collection system including inspection reports, mapping and condition rating with the Gravity Plan addressing defects from highest to lowest priority.

d. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Structure Report) and phased wastewater treatment plant structure rehabilitation plan (Structure Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Structure Report shall include an evaluation of all treatment units comprising the wastewater treatment plant with the Structure Plan addressing treatment units from highest to lowest risk of failure.

e. On, or before December 31, 2021, Penn Estates shall install a wastewater treatment plant SCADA system, or similar, capable of monitoring and controlling operational data and functions such as, poly-aluminum chloride, chlorination, methanol, sodium bisulfate feed rates and/or concentrations, to ensure the plant effluent maintains compliance. As of the date of this Consent Order and Agreement, Penn Estates has installed the SCADA system at its WWTP, but rendering the SCADA system operational will require Penn Estates to obtain a permit for the installation of a new upgraded methanol pump and sodium bisulfate pump that is SCADA compatible. Penn Estates submitted an application for a permit for the new SCADA-compatible methanol pump and sodium bisulfate pump to the Department on June 29, 2020, and that permit application is under for review by the Department and awaiting approval.

f. Penn Estates shall submit written progress reports to the Department on a semi-annual basis that document its progress on the completion of the corrective actions in Paragraphs 3.a-e. The reports are due on or before the fifteenth (15th) day of the month following the end of each semi-annual calendar period, i.e., July 15 and January 15. The first progress report is due on or before January 15, 2021.

Q. HAS ANY OTHER OF THE COMPANY WASTEWATER SYSTEMS RECEIVED NOVs FROM DEP?

A. Yes, the Tamiment system received a NOV dated May 20, 2020 in regard to 18 monthly effluent violations that occurred between August 2019 and January 2020.

Q. DID DEP TAKE FURTHER ACTION REGARDING THE NOV RELATED TO THE TAMIMENT SYSTEM?

A. Not that I am aware of.

<u>Customer Complaints Regarding the Wastewater System</u>

Q. WHAT COMPLAINTS ARE YOU GOING TO ADDRESS?

A. The complaints listed in the CUPA's Customer Complaint Logs for the years 2019, 2020 and 2021 (through May 24, 2021) and testimony by witnesses at the Public Input Hearing, related to wastewater service.

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS THREE WASTEWATER SYSTEMS?

A. Yes. See Exhibit TLF-WW3 for a summary of the Complaint Log for the three Company Wastewater Systems.[31]

Q. DID YOU NOTICE ANY RECURRING ISSUES IN THE COMPLAINT LOGS?

A. Yes. There have been a number of complaints about grinder pumps and basement backups due to failing grinder pumps.

Q. DID ANY CUSTOMERS RAISE QUALITY OF SERVICE ISSUES AT THE PUBLIC INPUT HEARING HELD ON JUNE 29, 2021?

[31] OCA Set I-7 (Wastewater)(confidential). I note that this response was marked confidential to protect customers' identifying information. My testimony and exhibits only present aggregate, non-customer specific information and are not confidential.

A. Yes. Based on my review of the transcript, the following customers testified about wastewater-specific quality of service issues:

- George F., Summerton Circle, Penn Estates Wastewater System testified about a grinder pump failure. Tr. 241.
- Christopher D., Long Lake Road, Tamiment Wastewater System testified that he had to replace two grinder pumps. Tr. 169.
- Michael S., Galion Drive, Tamiment Wastewater System testified that he had to replace the entire grinder pump system. Tr. 178.
- Oleg C., Brandyshire Drive, Tamiment Wastewater System testified that he had to get a new grinder pump. Tr. 198.
- Jessica C., Bombur Lane, Tamiment Wastewater System, testified that their grinder pump failed and caused a sewer backup that ruined every floor in their house and they had to cut walls 2 feet above the floor because the sewage seeped into the walls. Tr. 211.
- Joseph B., Underhill Drive, Tamiment Wastewater System, testified that he replaced his grinder pump. Tr. 232.
- Jennifer R., Old Took Drive, Tamiment Wastewater System, testified that they had a grinder pump fail. Tr. 235-236.

Q. WHAT SHOULD THE COMPANY DO IN RESPONSE TO THE CUSTOMER COMPLAINTS REGARDING GRINDER PUMPS?

A. Although grinder pumps are the responsibility of the customer, the Company should provide its customers with information regarding the proper installation, operation and maintenance of grinder pump systems. See Exhibit TLF-WW1 as an example.

Q. DOES THIS COMPLETE YOUR WRITTEN DIRECT TESTIMONY?

A. Yes, at this time. I reserve the right to supplement this testimony either in writing or orally if additional relevant information is received.

APPENDIX A

BACKGROUND AND QUALIFICATIONS

TERRY L. FOUGHT, P.E.

Education

Cleveland State University, Cleveland, Ohio, Bachelor of Civil Engineering, 1967

Professional Registrations

Professional Engineer, Pennsylvania, PE-023343-E, 1975

Professional Engineer, New Jersey, GE 25392, 1978 (Inactive)

Professional Engineer, Virginia, 10850, 1979 (Inactive)

Professional Land Surveyor, Pennsylvania, SU-000194-A, 1980 (Inactive)

Employment

From March 1983 to date, I have been a self-employed consulting engineer engaged in providing consulting engineering services to water and wastewater utilities, both private and municipal.

From May 1969 to March 1983, I was employed be E. H. Bourquard & Associates, Inc. as a project engineer to water and wastewater clients. At the time I left the firm I was a vice-president.

From 1962 to 1969, I was employed by the State of Ohio, Department of Highways and the Geauga County Ohio Sanitary Engineers Office as an engineer's assistant to assistant sanitary engineer with breaks in employment to attend college and 1½ years active duty military service.

Experience

I have prepared studies related to and designed water supply, treatment, transmission, distribution and storage facilities. I have provided services to the following private and municipal water suppliers: Amber Hill Mobile Home Park, Brockway Borough Municipal Authority, Dallas Water Company, Eastern Gas and Water Investment Company, Haddonfield Hills Development, Halifax Borough, Langhorne Spring Water Company, Mifflintown Municipal Authority, Neshaminy Water Resources Authority, Newberry Water Company, Pleasant View Mobil Home Park, H. B. Reese Candy Company, Shavertown Water Company, Smethport Water Company, Tunkhannock Water Company, and Watts Business Center.

I have prepared studies related to and designed wastewater collection and interceptor sewers, pumping stations and force mains, and treatment plants. I have provided services to the following private and municipal sewerage utilities: Brockway Glass Company, Central Dauphin School District, Clean Waste Technologies, Inc., Dauphin Borough, Dauphin Borough Municipal Authority, Halifax Area School District, Halifax Municipal Authority, Mercersburg Borough, Middle Paxton Township, Newberry Sewer Company, Newberry Township Municipal Authority, Park-a-way Park Family Campground, Reading Township Municipal Authority, Reynoldsville Borough, Saint Thomas Township, and Watts Business Center.

I have prepared over 100 stormwater management and drainage plans for land development and subdivision plans in Cumberland, Dauphin, and York Counties. Most of these plans included the design of storm sewer collection systems.

List of Public Utility cases which I have testified or provided substantial assistance:

NEW JERSEY BUREAU OF PUBLIC UTILITIES

Docket Number	Company Name
7712-1140	City of Trenton
787-847	Hackensack Water Company
814-119	City of Trenton
8310-862	City of Trenton

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket Number	Company Name
C-2010-2175673	Pennsylvania-American Water Company
C-2011-2259004	Endsley v PAWC
C-2012-2332951	Tschachler v UGI
C-2014-2447138	Hidden Valley Utility Services - Water
C-2014-2447169	Hidden Valley Utility Services - Wastewater
C-2018-2644592	Winola Water Company
C-2020-3022354	McKercher v Borough of Hanover (Water)
F-2011-2280415	Lynette Lugo Lopez v PGW
F-2012-2311590	Belinda Lyles v Aqua
F-2012-2330753	Scott v PGW
I-840377	Pennsylvania Gas and Water Company
I-00050109	PAWC High Fluoride Incident
I-00072313	WP Water & Sewer Co.
I-2009-2109324	Clean Treatment Sewer Company
I-2016-2526085	Delaware Sewer Company
P-2008-2075142	Pennsylvania-American Water Company
P-2014-2404341	Delaware Sewer Company
P-2017-2584953	Aqua Pennsylvania, Inc.
P-2017-2594725	Newtown Artesian Water Company
P-2017-2585707	Pennsylvania-American Water Company
P-2017-2589724	Suez Water Pennsylvania, Inc.
P-2020-3020914	Twin Lakes Utilities, Inc.
R-00850174	Philadelphia Suburban Water Company
R-00932785	Meadows Water Company
R-00963708 (Sewer)	Wynnewood Water & Sewer Corporation
R-00963709 (Water)	Wynnewood Water & Sewer Corporation
R-00984257	Consumers Pa. Water Company
R-00984334	National Utilities, Inc.
R-00984375	City of Bethlehem
R-00994672	Superior Water Company
R-00005031	Penn Estates Utilities, Inc.
R-00005050	Emporium Water Company
R-00005212 (Sewer)	Pennsylvania-American Water Company
R-00005997	Jackson Sewer Corporation
R-00027982 (Sewer)	Pennsylvania-American Water Company
R-00049862	City of Lancaster – Sewer Fund
R-00050607	Glendale Yearound Sewer Co.
R-00050659	Wonderview Water Co.
R-00050673	Pocono Water Co.
R-00050678	Mesco, Inc.

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

Docket Number	Company Name
R-00050814	Marietta Gravity Water Co.
R-00051030	Aqua Pennsylvania, Inc.
R-00051167	City of Lancaster – Water Fund
R-00061297	Emporium Water Co.
R-00061492	Reynolds Disposal Co.
R-00061496	Columbia Water Co.
R-00061617	Allied Utilities Services
R-00061618	Imperial Point Water Co.
R-00061625	Phoenixville Sewer Fund
R-00061645	Eaton Water Co.
R-00062017	Borough of Ambler Water Department
R-00072074 (Sewer)	Aqua PA, Little Washington Division
R-00072075 (Sewer)	Aqua PA, Chesterdale/Williamstown Division
R-00072351	Village Water Company
R-00072491	Clarendon Water Company
R-00072492	City of Bethlehem, Bureau of Water
R-00072493 (Water)	Total Environmental Solutions, Inc., Treasure Lake
R-00072711	Aqua PA
R-2008-2020729	Blue Knob Water Company
R-2008-2020873	Warwick Drainage Company
R-2008-2020885	Warwick Water Works, Inc.
R-2008-2032689	PAWC Coatesville Wastewater Operations
R-2008-2039261	Superior Water Company
R-2008-2045157	Columbia Water Company
R-2008-2047291	Rock Spring Water Company
R-2008-2079310	AQUA, PA
R-2008-2081738	Little Washington Wastewater Company
R-09-2097323	Pennsylvania-American Water Company
R-2009-2102464	Reynoldsville Water Company
R-2009-2103937	PA Utility Company, Inc (Water)
R-2009-2103980	PA Utility Company, Inc (Sewer)
R-2009-2105601	Fryburg Water Company
R-2009-2110093	Birch Acres Water Company
R-2009-2115743	Lake Spangerberg Water Company
R-2009-2116908	Hanover Borough Water
R-2009-2117289	Utilities Inc, Westgate (Water)
R-2009-2117532	Penn Estates Utilities Inc (Water)
R-2009-2117750	Newtown Artesian Water Company
R-2009-2121928	Clean Treatment Sewage Company
R-2009-2122887	United Water Pennsylvania, Inc
R-2009-2132019	AQUA, PA
R-2010-2157062	Tri-Valley Water Supply Company, Inc
R-2010-2166208	Pennsylvania American Water Company (Wastewater)
R-2010-2171339	Reynolds Disposal Company
R-2010-2171918	TESI, Treasure Lake, Water Division
R-2010-2171924	TESI, Treasure Lake, Sewer Division
R-2010-2174643	City of Lock Haven
R-2010-2179103	City of Lancaster Water Department
R-2010-2191376	Superior Water Company
R-2010-2194499	Dear Haven Water Company
R-2010-2194577	Dear Haven Sewer Company

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

Docket Number	Company Name
R-2010-2207833	Little Washington Waste Water, Masthope Division
R-2010-2207853	Little Washington Waste Water, SE Consolidated Division
R-2011-2218562	CMV Sewage Company, Inc.
R-2011-2232243	Pennsylvania-American Water Company
R-2011-2232985	United Water Company
R-2011-2244756	City of Bethlehem- Bureau of Water
R-2011-2246415	Twin Lakes Utilities, Inc.
R-2011-2248531	Wonderview Sanitary Facilities
R-2011-2248937	Fairview Sanitation Company
R-2011-2251181	Borough of Quakertown, Water
R-2011-2255159	Penn Estates Utility Inc - Water
R-2012-2286118	Audubon Water Company
R-2012-2330887	North Heidelberg Sewer Company
R-2012-2310366	City of Lancaster Sewer Fund
R-2012-2311725	Borough of Hanover - Sewer
R-2012-2315536	Imperial Point Water Company
R-2012-2336662	Rock Springs Water Company
R-2013-2350509	City of DuBois, Bureau of Water
R-2013-2355276	Pennsylvania-American Water Company
R-2013-2360798	Columbia Water Company
R-2013-2370455	Penn Estates Utilities, Inc. - Sewer Division
R-2013-2367108	Fryburg Water Company
R-2013-2367125	Cooperstown Water Company
R-2013-2390244	City of Bethlehem – Bureau of Water
R-2014-2400003	Borough of Ambler – Water Department
R-2014-2420204	Pocono Waterworks Company, Inc. (Water)
R-2014-2420211	Pocono Waterworks Company, Inc. (Sewer)
R-2014-2402324	Emporium Water Company
R-2014-2430945	Plumer Water Company
R-2014-2428304	Borough of Hanover Water Department
R-2014-2410003	City of Lancaster-Bureau of Water
R-2014-2427035	Venango Water Company
R-2014-2427189	B E Rhodes Sewer Company
R-2014-2447138	Hidden Valley Utilities Services - Water
R-2014-2447169	Hidden Valley Utilities Services – Sewer
R-2014-2452705	Delaware Sewer Company
R-2015-2462723	United Water Pennsylvania
R-2015-2470184	Borough of Schuylkill Haven Water Department
R-2015-2479962	Corner Water Supply
R-2015-2506337	Twin Lakes Utilities, Inc.
R-2016-2538600	Community Utilities of Pennsylvania, Inc.
R-2016-2554150	City of DuBois – Bureau of Water
R-2017-2595853	Pennsylvania-American Water Company
R-2017-2598203	Columbia Water Company
R-2017-2631441	Reynolds Water Company
R-2018-3000022	York Water Company
R-2018-3000834	Suez Water Company
R-2018-3002645 (Water)	Pittsburgh Water & Sewer Authority
R-2018-3002647 (Sewer)	Pittsburgh Water & Sewer Authority
R-2018-3001306 (Water)	Hidden Valley Utility Services
R-2018-3001307 (Sewer)	Hidden Valley Utility Services

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

R-2019-3008947 (Water)	Community Utilities of PA
R-2019-3008948 (Sewer)	Community Utilities of PA
R-2020-3017951 (Water)	Pittsburgh Water & Sewer Authority
R-2020-3017970 (Sewer)	Pittsburgh Water & Sewer Authority
R-2020-3019369	Pennsylvania American Water Company
R-2020-3019612	Reynolds Disposal Company
R-2020-3020256	City of Bethlehem -Water
R-2020-3020917	Audubon Water Company

OCA Exhibit TLF-W1

CUPA Response to OCA-I-8

Unaccounted For Water

8. For each of the Company's water systems, please provide calculations showing the Company's percentage of unaccounted water for the calendar years 2019 and 2020. If estimates are used, please provide the calculation and basis for each estimate. Explain all assumptions used in the calculations.

RESPONSE:

Westgate – 2019 13.4%, 2020 9.15%

PEUI – 2019 26.8%, 2020 17.69%

Tami – 2019 (data for only Sept – December) 63.93%, 2020 56.01%

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

Community Utilities of Pennsylvania Inc. For the Year Ended December 31, 2020

(Company Name)

500. WATER DELIVERED INTO SYSTEM DURING YEAR

Every estimated value shall be supported by such detailed information as will permit a ready identification, analysis, & verification of all relevant facts. The Company shall be prepared to furnish to the Commission this detailed information.

Line No.	Description (a)	(Gallons) (b)	(gpd) (c)
1	**Water Delivered for Distribution & Sale:**		
2	Water Obtained from Company Sources	163,521,398	446,780
3	Water Obtained from Other Independent Utilities	57,212,800	156,319
4	**Total Water Delivered**	**220,734,198**	603,099
5	**Metered Sales:**		
6	Residential	149,883,704	409,518
7	Commercial	2,057,418	5,621
8	Industrial		
9	Public		
10	Other Water Utilities		
11	Private Fire Protection		
12	Public Fire Protection		
13	Other Metered Sales Identify _____		
14	**Total Metered Sales**	151,941,122	415,140
15	**Unmetered Sales:**	NONE	NONE
16	Residential		
17	Commercial		
18	Industrial		
19	Private Fire Protection		
20	Public Fire Protection		
21	Other Unmetered Sales Identify _____		
21	**Total Unmetered Sales**	-	-
22	**Total Sales**	151,941,122	415,140
23	**Non-Revenue Usage Allowances:**		
24	**Authorized Unmetered Usage:**		
25	Main Flushing	2,819,672	7,704
26	Blow-off Use		
27	Others: Identify _____	1,392,222	3,804
28	Unauthorized Use		
29	Unavoidable Leakage _____ gpd/mile of main		
30	Adjustments:		
31	Located & Repaired Breaks in Mains & Services	11,749,540	32,103
32	Others Identify _PEUI WWTP_____	1,603,488	4,381
33	**Total Allowances & Adjustments**	17,564,922	47,992
34	**Unaccounted-for-Water**	**51,228,154**	
35	**Percentage Unaccounted-for-Water**	**23.2%**	

OCA Exhibit TLF-W2

CUPA Response to OCA-I-24

Isolation Valves

24. For each of the Company's water systems, please provide the following information on the isolation valves in the distribution system:
    a. does the Company keep records of when each isolation valve has been exercised?
    b. how many isolation valves are in the Company's distribution system?
    c. how many different isolation valves have been exercised during the calendar years 2019, 2020 and 2021 to date;
    d. identify the location of every isolation valves that has not been exercised during the past five years;
    e. how many new isolation valves have been installed during the calendar years 2019, 2020 and 2021 to date;
    f. How many isolation valves have been repaired during the calendar years 2019, 2020 and 2021 to date; and
    g. for every isolation valve that cannot be exercised, submit a schedule for repair or replacement of the valve.

RESPONSE:

a. does the Company keep records of when each isolation valve has been exercised?
Yes

b. how many isolation valves are in the Company's distribution system?
578

c. how many different isolation valves have been exercised during the calendar years 2019, 2020 and 2021 to date;
2020 Westgate 181 valves
2020 Penn Estates 314 valves

d. identify the location of every isolation valve that has not been exercised during the past five years;
Tamiment's valves will be located and exercised in 2021

e. how many new isolation valves have been installed during the calendar years 2019, 2020 and 2021 to date;
0

f. How many isolation valves have been repaired during the calendar years 2019, 2020 and 2021 to date;
0

g. for every isolation valve that cannot be exercised, submit a schedule for repair or replacement of the valve.

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

OCA Exhibit TLF-W3

Pressure Survey

Penn Estates

2019

Hydrant # 17 End of Locust	90 psi
Hydrant # 183 106 Reston	90 psi
Hydrant # 201 4257 Wood Acr	63 psi
Hydrant # 107 1266 Sandlewo	43 psi
Hydrant # 32 5303 Delia	103 psi
Hydrant # 81 Landsdale Drive	128 psi
Hydrant # 197 end of Fairfax	93 psi
Hydrant # 181 Stonehenge	40 psi
Hydrant # 145 end of Clicko	10 psi
Hydrant # 114 woodchuck	27 psi

2020

6119 Brentwood Ter	50 psi
1124 Belaire Dr	63 psi
431 Hyland Dr	50 psi
1271 Kensington Dr	45 psi
1223 Brentwood Dr	83 psi
1301 Brentwood Dr	35 psi
2095 Candlewood Dr	65 psi
128 Bayberry Ct	60 psi
215 Garden Ter	80 psi
6247 Willowicke Ter	47 psi
265 Spicebush Dr	100 psi
312 Ash Ter	90 psi
Hydrant # 143 Deborah	15 psi
Hydrant # 145 Clicko	5 psi
Hydrant # 187 Summerton	43 psi

2020

Hydrant Number	PSI
195	78
196	90
126	76
89	60
200	82
176	66
138	76
194	64
86	74
190	80
31	100
3	96
47	90
34	90
32	92
16	95
33	80
26	88

161	65
182	66
160	62
149	50
74	60
140	58
75	42
29	78
27	66
62	56
61	54
178	67
66	56
65	68
64	42
30	69
73	68
22	54
108	50
25	54
106	48
109	56
107	44
105	48
104	59
101	66
103	72
156	63
155	62
159	48
158	58
150	52
154	64
153	64
72	42
87	70
201	62
169	70
191	71
177	68
187	48
185	22
184	23
189	51
181	40
192	34
163	32

162	40
145	10
143	20
146	44
164	40
165	58
166	60
147	38
151	42
139	52
167	72
168	82
137	44
180	70
179	72
193	57
203	56
204	34
174	46
175	34
94	84
95	68
116	40
113	22
114	30
205	58
117	56
120	60
111	58
112	48
119	54
118	53
77	66
79	74
78	70
172	38
171	60
134	96
135	106
133	118
131	86
130	117
93	72
77	86
121	104
122	124
92	78

6	72
9	76
1	88
13	60
12	72
67	78
37	80
36	79
35	76
14	74
15	74
11	76
19	74
17	84
7	105
58	102
82	104
90	90
152	64
157	66
102	72
148	50
186	52
115	38
133	12
136	62
170	70
173	74
199	64
202	64
132	104
20	76
18	82
76	120

2021

	PSI
Hydrant # 17 End of Locust	92
Hydrant # 183 106 Reston	88
Hydrant # 201 4257 Wood Acr	38
Hydrant # 32 5303 Delia	90
Hydrant # 81 Landsdale Drive	138
Hydrant # 197 end of Fairfax	94
Hydrant # 181 Stonehenge	20
Hydrant # 145 end of Clicko	5
Hydrant # 114 woodchuck	28
Hydrant # 143 Deborah	5
Hydrant # 145 Clicko	5
Hydrant # 187 Summerton	26

Hydrant 154 Sandlewwood 84

Westgate

2013

2755 Whit 56 psi
1424 West 58 psi
1030 Bridl 70 psi
818 Blair R 72 psi
364 Kevin 71 psi

2014

1425 Statt 58 psi
1225 Ston 58 psi
2655 Woo 68 psi
855 Yorksh 74 psi
609 Blair R 71 psi
414 Kevin 72 psi

2015

1029 Blair 70 psi
430 Bridle 80 psi

2016

2755 Whit 52 psi
2400 Statt 56 psi
939 Blair R 72 psi
364 Kevin 72 psi
39 Bridle P 80 psi
56 TOA 75 psi

2021

Hydrant #	PSI
13	80
12	78
14	70
9	82
10	92
11	90
16	80
17	84
7	78
18	78
8	74
20	86
19	76
UNK	80
22	75
31	73
24	84
UNK	78
27	76
47	66
28	80
46	70

30	84
29	84
32	84
33	86
36	80
34	82
38	88
63	78
64	80
65	78
66	78
67	76
75	76
68	74
69	76
70	72
73	76
76	76
71	66
72	76
74	72
42	78
39	78
37	78
UNK	76
2	74
55	78
44	80
45	80
5	60
41	76
40	70
43	64
UNK	74
58	78
57	82
56	64
25	86
26	86
3	74
48	72
49	70
51	72
52	62
50	72
54	76
53	70

77	69
6	70
78	72

Tamiment

2020	Address	PSI
	Tamiment Golf Course near Club House	61
	Lake Drive across from The Chalet	52
	Building 113 Condor Drive	48
	Building 125 Condor Drive	48
	126 Blue Heron Road	50
	130 Blue Heron Road	64
	Tamiment Lake Drive at Blue Heron Road	48
	Tamiment Lake Road at Falcon Crest Circle	50
	1065 Bald Eagle Court	34
	1057 Bald Eagle Court	40
	1044 Falcon Crest Circle	58
	1027 Falcon Crest Circle	60
	Tamiment Lake Drive	62
	441 Underhill Drive	54
	103 Rivendell Drive	43
	Rivendell Drive at Water Tower	21
	314 Underhill Drive	48
	Across from 5123 Hemlock Lane	46
	Across from 5141 Hemlock Lane	56
	231 Ravenhill Road	54
	Bindale Road at Mirkwood Road	38
	Arkenstone Drive at Hobbit Drive	44
	Arkenstone Drive at Brandyshire Drive	54
	Cedar Crest Drive at Elrond Drive	64
	Cedar Crest Drive	58
	Cedar Crest Drive	62
	Elrond Drive	44
	Elrond Drive	42
	Elrond Drive	37
	Cherry Hill Road at Woody End Way	38
	Cherry Hill Road at Birchwood Drive	42
	Oakenshield Road	62
	Oakenshield Road	60
	Birchwood Drive	48
	Birchwood Drive	46
	Woody End Way	40
	Woody End Way	48
	241 Rivendell Drive	18
	117 Oakenshield Drive	28
	217 Old Took Drive	40
	103 Old Took Drive	40
	215 Withywindle Way	42
	101 Withywindle Way	44
	Oakenshield Drive at Swartsburo Drive	58
	1004 Woody End Way	46

Woody End Way at Lonely Mountain Lane	52
Woody End Way at Kili Way	40
1106 Long Lake Road on Woody End Way	44
1104 Woody End Way	58
Woody End Way at Gollum Lane	46
602 Carrock Way on Woody End Way	36
605 Bombur Lane on Woody End Way	42
510 Gandolf Road	40
104 Thorin Way on Balin Lane	44
Before 1008 Long Lake Road	46

OCA Exhibit TLF-W4

Complaint Log Summary

Penn Estates Water System

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls		
	2019	**2020**	**2021**
Penn Estates Water System	**thru Dec 31**	**thru Dec 31**	**thru May10**
Boil Water Advisory	0	3	0
Bottle Water - BWA	0	3	0
Curb Box Locate/Replace	1	1	0
Truck Water to Storage Tank	0	9	0
Frozen Piping	9	1	0
High Bill, Check Meter, Leaks	7	13	8
Investigate High Usage	0	9	0
Leak, Company System	3	7	1
Investigat Leak, None Found	14	37	6
Leak, Customer	20	14	3
Leak, Check For	24	18	3
Meter	19	20	3
Meter Test	1	5	2
Meter Box Repair/Replace	3	2	0
Miscellaenous	0	3	2
No Water	23	39	4
Turn Service On/Off	17	30	8
Pressure	17	40	3
Damage Restoration	3	2	1
Discolored, Dirty Water	22	25	6
Water Quality, Illness	3	1	0
Water Quality, Lead	2	0	0
Water Quality, Staining	0	1	0
Water Quality, Test	0	1	0
Taste & Odor	2	2	1
Water Quality, Well 4 Air	4	7	0
Water Quality, Well? Air	1	9	0
Totals	194	293	51

OCA Exhibit TLF-W5

CUPA Response to OCA-I-32

Well #8

32. In regard to the Penn Estates System, please discuss the status of following:
    a. Manganese in Well #8;
    c. Arsenic in Well #7;
    d. The data collection and monitoring of the SCADA network;
    e. Chlorine analyzers at Wells #5, #6 and #7.

RESPONSE:

A. Manganese in Well #8;
Well 8 has been taken off-line due to high manganese levels. An Engineer will pursue drilling a new well. The fate of Well 8 will be determined at that time.

B. Arsenic in Well #7;
Well 7 elevated Arsenic has been resolved by regular flushing of entry point service line.

C. The data collection and monitoring of the SCADA network;
New SCADA system was installed in 2020. SCADA monitors tank levels, well gpm, well chlorine entry point residual.

D. Chlorine analyzers at Wells #5, #6 and #7.
Wells 5 and 7 have Hach CL10 analyzers. Well 6 has a Hach CL17 analyzer. A CL10 analyzer will be installed in 2021.

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

OCA Exhibit TLF-W6

CUPA Response to OCA-I-5

Boil Water Advisories

5. For each of the Company's water systems, please provide a list of all Boil Water Advisories declared by the Company after the dates of those listed in the Company's filing. Include the starting dates, the dates they ended and the reasons for the Boil Water Advisories.

RESPONSE:

PENN ESTATES: 3/12/21 BWA initiated. Rescinded 3/15/21. Watermain break

8/3/20 BWA initiated. Rescinded 8/13/20. Water main breaks, elevated usage, empty storage tanks.

WEST GATE: None

TAMIMENT: None

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

OCA Exhibit TLF-W7

Complaint Log Summary

Westgate Water System

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls		
	2019	**2020**	**2021**
Westgate System	**thru Dec 31**	**thru Dec 31**	**thru May10**
Billing Adjustment	0	0	2
Curb Box, Locate, Lid	5	5	0
Flushing	1	8	1
High Bill	0	2	0
High Bill, Check Meter, Leaks	14	20	11
Main Break/Leak, Company	6	0	2
Service Line Break, Leak, Custom	0	1	0
Meter	3	1	2
Meter Test	2	1	1
Meter Replacement Program	2	7	2
Miscellaneous	4	0	1
No Water	9	0	0
Turn Service On/Off	3	2	1
Pressure	8	2	1
Damage Restoration	6	3	1
Water Quality - Dirty, Discolored	35	43	3
Water Quality - General Informati	2	2	0
Water Quality - Staining, Mold	14	2	0
Water Quality - Taste, Odor	2	0	0
Totals	110	80	25

OCA Exhibit TLF-W8

Complaint Log Summary

Tamiment Water System

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls		
	2019	**2020**	**2021**
Tamiment System	**thru Dec 31**	**thru Dec 31**	**thru May10**
Billing Adjustment	0	5	0
High Bill, Check Meter, Leaks	1	26	8
Leak, Customer	0	1	0
Meter	2	0	0
Meter Test	1	8	1
Meter Box Repair/Replace	0	0	1
No Water	8	7	2
Turn Service On/Off	0	1	3
Pressure	1	8	4
Damage Restoration	0	0	2
Water Quality, Dirty Discolored	3	0	0
Totals	16	51	21

OCA Exhibit TLF-W9

CUPA Response to OCA-I-3

Drinking Water Standard Violations

3. For each of the Company's water systems, please provide a list of all violations of primary and secondary drinking water standards from January 1, 2019 to the present. For each violation, state whether any fines or penalties were assessed by DEP.

RESPONSE: Please see attached documents in "OCA-Fought Set I – Question 3 & 4".

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

Pennsylvania

Violations of primary and secondary drinking water standards from January 1, 2019 to the present.

Penn Estates

- (2019) Failure to Issue Tier 1 Public Notification

Fines/Penalties: None
Remediation: Public Notice issued, compliance achieved

- (2019) Failure to Maintain 4-Log Inactivation Disinfection Treatment

Fines/Penalties: None
Remediation: Public Notice issued, compliance achieved.

- (2019) Failure to Properly Collect or Analyze RTCR Routine Samples

Fines/Penalties: None
Remediation: Report submitted, compliance achieved.

- (2019) Failure to Monitor/Report EP Disinfectant Residual for GWR

Fines/Penalties: None
Remediation: Public Notice submitted, compliance achieved.

- (2019) Failure to Monitor/Report for D/DBP – TTHM
- (2019) Failure to Monitor/Report for D/DBP – HAA5

Fines/Penalties: None
Remediation: Public Notice submitted, compliance achieved.

- (2019) Failure to Monitor/Report for D/DBP – Chlorine

Fines/Penalties: None
Remediation: Report submitted, compliance achieved.

- (2019) MCL Violation – Arsenic

Fines/Penalties: None
Remediation: Well taken offline for the time being. If 1Q20 results are under 0.08, system will return to reduced monitoring.

- (2019) Ongoing exceedance of EPA Lifetime Health Advisory level of manganese

Fines/Penalties: None
Remediation: Well taken offline.

- (2020) Failure to Monitor/Report Routine Samples
  SOC samples submitted late

Fines/Penalties: None
Remediation: Report submitted. Public Notice will be issued with 2020 CCR.

Westgate

- (2021) Failure to Monitor/Report for D/DBP – TTHM
- (2021) Failure to Monitor/Report for D/DBP – HAA5

Fines/Penalties: None

Remediation: Report submitted. Public Notice will be issued with 2020 CCR.

Tamiment

- (2019) Failure to Monitor/Report EP Disinfectant Residual for GWR

Fines/Penalties: None
Remediation: Public Notice submitted, compliance achieved

- (2020) Chlorine Report

Fines/Penalties: None
Remediation: Report submitted, Compliance achieved

- (2020) Failure to Properly Collect or Analyze RTCR Routine Samples

Fines/Penalties: None
Remediation: Public Notice submitted, Compliance achieved

- (2020) Failure to Monitor/Report EP Disinfectant Residual for GWR

Fines/Penalties: None
Remediation: Public Notice submitted, Compliance achieved

OCA Exhibit TLF-WW1

Grinder Pump FAQs

Grinder Pump- Frequently Asked Questions

1.-What is a grinder pump?

A grinder pump is a pumping unit consisting of a pump and small pipe from the unit to the sewer system. Installed outside of your home, grinder pumps are used to discharge wastewater from your home to the sewer system in the street or right-of-way.

2.-When is a grinder pump installed instead of a traditional sewer lateral?

A grinder pump is needed when conventional gravity sewers and/or laterals cannot be used to service an area or property, often due to the topography of the area. Typically, they are needed when a home is lower than the street and/or further away from the sewers. They are also required when a low pressure sewer system is constructed instead of a gravity sewer system.

3.-Why does my property need a grinder pump when my neighbor's property can be served by gravity sewers?

Your home may either sit lower than your neighbor's, or further away from the gravity sewer in the street and could not be served by a gravity sewer/lateral. Each home is evaluated on an individual basis.

4.-Who is responsible for the grinder pump?

Most grinder pumps are installed on private property and therefore are the responsibility of the property owner. The same is true for the private sewer service line on the home or business owner's property. Augusta Utilities' responsibility for sewer service begins after the property line in the public right-of-way. Therefore the resident is responsible for the cost of the electricity needed to operate the grinder pump which will be included in your electricity bill.

5.-How much does it cost to operate a grinder pump?

With the SSCP, the plumber will install the grinder pump and connect electricity to the device. The cost for electricity to operate the grinder pump is similar to that of a 40-watt light bulb, which is about $15 to $20 per year.

6.-What can I do to protect my grinder pump?

A properly maintained grinder pump should be able to handle wastewater from the kitchen, bathroom, laundry, etc. However, some chemicals and substances can adversely impact a grinder pump and may cause safety hazards. Please check the labels on all chemicals before using / disposing. Also, never pour the following items down drains or flush down toilets:

- Grease (a byproduct of cooking that comes from meat fats, oils, shortening, butter, margarine, food scraps, sauces and dairy products);
- Explosive or flammable material;
- Kitty Litter;
- Aquarium gravel;
- Strong Chemicals or toxic, caustic or poisonous substances;
- Degreasing solvents;
- Diapers, feminine products, or cloth of any kind;
- Fuel or lubricating oil, paint thinner of antifreeze;
- Plastic objects; and
- Seafood Shells

*****These items can damage the grinder pump and its controls, cause blockages and backups and may create unsafe conditions in your lines and tank.**

7.-Does a grinder pump need regular maintenance or need to be pumped out, like my septic system?

Septic systems need to be pumped because they are tanks and need to periodically have the contents removed.

Grinder pumps do not need to be pumped out because they pump out the wastewater once the contents reach a certain level. Grinder pumps average eight years between service calls, so minimal regular maintenance is required when operated under normal conditions.

*****In addition to following the tips provided in question #6, please follow the manufacturer's recommended maintenance guidelines.**

8.-What happens during a power failure?

If the power goes out, the grinder pump will not work. However, the pump unit does have storage capacity. During power outages, the two largest producers of wastewater (dishwater and washing machine) are not in use; therefore, your water usage decreases. Because the length of the power outage cannot be planned, you should conserve water to the best of your ability.

***** Remember that your grinder pump is powered by electricity. In the event of a power outage, your pump will not work unless it is powered by a generator.**

9.-What should I do with my pump when I go on vacation?

If you plan on being away for several days, replace the wastewater in the tank with clean water to help minimize odors.

To do this,

- Run an inside faucet for about 10 minutes – long enough for the grinder pump to start working (you may need to go outside near the pump and listen to verify it has started).
- After the pump starts, turn the inside faucet off.
- The pump will run until the tank is empty and shut off automatically.
- This process will cleanse the pump and keep it filled with a minimum amount of clean water. Remember to always leave the power to the pump on.

10.-Grinder Pump Illustrations-

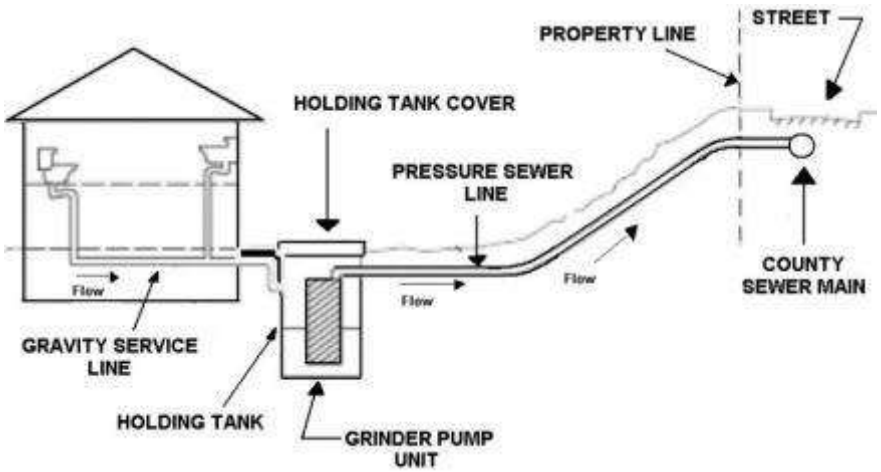


Photo above-Grinder pump station with fiberglass tank and stainless steel lid installed outside a home

Photo above-Grinder pump station with HDPE tank being installed

OCA Exhibit TLF-WW2

Penn Estates CO&A

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In The Matter Of:

Penn Estates Utilities Inc.	:	Violations of The Clean Streams Law
570 Hallet Road	:	and
East Stroudsburg, PA 18304	:	NPDES Permit No. PA0060283
	:	Stroud Township, Monroe County

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement is entered into this 22nd day of October 2020, by and between the Commonwealth of Pennsylvania, Department of Environmental Protection ("Department") and Penn Estates Utilities Inc. ("Penn Estates").

The Department has found and determined the following:

A. The Department is the agency with the duty and authority to administer and enforce The Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. § 691.1 et seq. ("Clean Streams Law"); Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code") and the rules and regulations promulgated thereunder.

B. Penn Estates is a "person" as defined in Section 1 of The Clean Streams Law, 35 P.S. § 691.1. Penn Estates maintains a mailing address of 570 Hallet Road, East Stroudsburg, Pennsylvania 18304.

C. Penn Estates owns and operates the Penn Estates Wastewater Treatment Plant ("WWTP") located in Stroud Township, Monroe County, Pennsylvania.

D. On August 27, 2012, the Department reissued National Pollutant Discharge Elimination System Permit No. PA0060283 ("NPDES Permit") to Penn Estates, which authorized a discharge of treated sewage to Unnamed Tributary #04929 to Brodhead Creek in accordance with the effluent limitations, monitoring and reporting requirements, and other conditions set forth in the NPDES Permit. The effective date of the NPDES Permit was September 1, 2012.

E. Penn Estates is required by the NPDES Permit and Sections 201 and 202 of The Clean Streams Law, 35 P.S. §§ 691.201 and 691.202, to fully comply with the effluent limits set forth in the NPDES Permit.

F. The NPDES Permit requires that effluent discharged from Penn Estates meets identified concentration criteria for certain parameters on a routine basis. Penn Estates exceeded the NPDES Permit's effluent limitations as reported by Penn Estates' monthly Discharge Monitoring Reports ("DMRs"), as follows:

Monitoring Period	Parameter	Permit Limit	Reported Value
October 2016	$CBOD_5$ *Average Monthly*	10.0 mg/L	11.5 mg/L
May 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
June 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
July 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
July 2017	Total Phosphorus *Average Monthly*	2.0 mg/L	3.1 mg/L
August 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
September 2017	Dissolved Oxygen *Minimum*	7.0 mg/L	6.5 mg/L
December 2017	$CBOD_5$ *Average Monthly*	10.0 mg/L	10.7 mg/L
March 2018	NO_2+NO_3 *Average Monthly*	13.0 mg/L	<13.9 mg/L
April 2018	Total Suspended Solids *Average Monthly*	10.0 mg/L	<16.7 mg/L
April 2018	Total Suspended Solids *Average Monthly Loading*	46.7 lbs/day	<61.8 lbs/day
December 2018	NO_2+NO_3 *Average Monthly*	13.0 mg/L	15.2 mg/L

G. Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), prohibits discharges from a Sanitary Sewer Overflow ("SSO"). Failure to prevent the occurrence of an SSO constitutes unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

H. Penn Estates failed to prevent the occurrences of SSOs as reported by Penn Estates' written notifications submitted to the Department, as follows:

Date of Incident	Location	Volume (gallons)	Suspected Cause
December 16, 2017	314 Overlook Drive Manhole 120	150-200	Blockage of collection between Manhole 121-122
December 21, 2018	WWTP: Equalization ("EQ") Tank	200	Excessive Rainfall

I. Penn Estates' SSOs noted in Paragraph H, constitute violations of Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), and Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

J. Part A.III.C(1). of the NPDES Permit states, in relevant part, the permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. A permit may be required for these situations prior to implementing the planned changes. A permit application, or other written submission to the Department, can be used to satisfy the notification requirements.

K. On December 24, 2018, the Department received Penn Estates' December 21, 2018 SSO report, which noted an installation of a second 10 HP pump in EQ tank 5 to replace an existing 7.5 HP pump. The Department was not notified of this change prior to the installation of the new pump.

L. Penn Estates' failure to notify the Department prior to planned physical alterations or additions to the WWTP constitutes a violation of Part A.III.C(1) of the NPDES Permit.

M. Parts A.I.A., A.I.B. and A.I.C. of the NPDES Permit requires that Penn Estates sample in accordance with the sample frequency set forth in the NPDES Permit. Failure to do so constitutes unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

N. Penn Estates failed to sample in accordance with the required sample frequency as reported by Penn Estates' monthly DMRs, as follows:

Monitoring Period	**Parameter**	**Required Frequency**	**Reported Frequency**
December 2017	Total Organic Carbon	1/month	0/month
February 2019	pH	1/day	25/28 days
	Dissolved Oxygen	1/day	24/28 days
	Total Residual Chlorine	1/day	22/28 days
March 2019	Total Residual Chlorine	1/day	29/31 days

O. On April 10, 2019, the Department sent a Notice of Violation ("NOV") notifying Penn Estates of its effluent violations noted in Paragraph F, SSO violations noted in Paragraph I, and failure to notify the Department prior to the replacement of the 7.5 HP pump noted in Paragraph L. Said NOV requested a written response within 15 days of receipt indicating the cause of the noncompliance and corrective actions taken to ensure future compliance. In addition, the Department requested Penn Estates contact the Department to discuss a permit determination evaluation regarding the EQ tank pumps.

P. On May 6, 2019, a representative of Penn Estates contacted the Department to discuss a permit determination evaluation regarding the influent EQ tank pump, as requested in the Department's April 10, 2019 NOV.

Q. On May 15, 2019, a representative of Penn Estates sent an e-mail correspondence to the Department with information regarding the influent EQ tank pump.

R. On May 17, 2019, the Department sent an e-mail correspondence notifying Penn Estates that a Water Quality Management ("WQM") Part II Permit application would need to be submitted to address the changes made to the influent EQ pumps.

S. Penn Estates again failed to prevent the occurrences of SSOs as reported by Penn Estates' written notifications submitted to the Department, as follows:

Date of Incident	Location	Volume (gallons)	Suspected Cause
March 22, 2019	WWTP: EQ Tank and pipe	5,000	Hydraulic Overload
March 23, 2019	WWTP: EQ Tank	1,260	Hydraulic Overload
April 20, 2019	WWTP: EQ Tank	300,000	Hydraulic Overload
April 22, 2019	WWTP: EQ Tank	2,340	Hydraulic Overload
May 5, 2019	WWTP: EQ Tank	16,200	Hydraulic Overload
May 12, 2019	WWTP: EQ Tank	32,600	Hydraulic Overload
May 20, 2019	WWTP: EQ Tank	24,000	Hydraulic Overload

T. Penn Estates' SSOs noted in Paragraph S, constitute violations of Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), and Section 611 of The Clean Streams Law, 25 P.S. § 691.611.

U. On June 7, 2019, Penn Estates sent a correspondence notifying the Department of a potential discharge pipe discovered by the operator following the March 22, 2019 SSO at the WWTP. The pipe was located on EQ basin 4 and was underground between EQ basin 4 and EQ basin 5. Attached to the correspondence was a site plan dated September 15, 1998, which showed the pipe labeled as an 8" Extended Aeration Effluent. Penn Estates noted that around April 11, 2019 said pipe was removed by an environmental contractor.

V. Penn Estates again exceeded the NPDES Permit's effluent limitations as reported by Penn Estates' monthly DMR, as follows:

Monitoring Period	Parameter	Permit Limit	Reported Value
June 2019	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.037 mg/L

W. On August 28, 2019, the Department received a WQM Part II Permit application from Penn Estates for the removal of the existing 7.5 HP transfer pump and its replacement with a 10 HP transfer pump in EQ Basin 4 noted in Paragraph K.

X. On September 11, 2019, the Department sent an NOV notifying Penn Estates of its SSOs, violations noted in Paragraph T, and an effluent violation noted in Paragraph V. Said NOV requested Penn Estates along with anyone else deemed necessary attend an enforcement conference at the Department's Northeast Regional Office on November 6, 2019.

Y. Penn Estates again exceeded the NPDES Permit's effluent limitations as reported by Penn Estates' monthly DMRs, as follows:

Monitoring Period	Parameter	Permit Limit	Reported Value
August 2019	Dissolved Oxygen *Instantaneous Max*	7.0 mg/L	6.77 mg/L
August 2019	Total Phosphorus *Average Monthly*	2.0 mg/L	2.5 mg/L
September 2019	Fecal Coliform *Instantaneous Max*	1,000/100 mL	2,700/100 mL
September 2019	NO_2+NO_3 *Average Monthly*	13.0 mg/L	16.44 mg/L

September 2019	Total Phosphorus *Average Monthly*	2.0 mg/L	2.49 mg/L
October 2019	NO_2+NO_3 *Average Monthly*	13.0 mg/L	16.0 mg/L

Z. On October 8, 2019, the Department issued WQM Permit 4598410 to Penn Estates for the replacement and upgrade to the EQ basin transfer pumps.

AA. Penn Estates' NPDES Permit requires that quarterly DMRs for the reporting of Total Dissolved Solids ("TDS") be properly completed and received by the Department within 28 days from the end of each monitoring period. Failure to do so constitutes unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

BB. Penn Estates' failed to submit a quarterly DMR for the reporting of TDS in a timely manner. Specifically, the following DMR was received by the Department later than the requirements of the NPDES Permit:

Monitoring Period	**Due Date**	**Date Received**
July 2019 – September 2019	October 28, 2019	October 30, 2019

CC. On November 6, 2019, representatives of Penn Estates met with the Department to discuss the violations noted in Paragraphs F, I, L, N, T, V, Y, BB and GG, the discovered potential discharge pipe noted in Paragraph U, and Penn Estates' intended actions to return to compliance. The Department requested Penn Estates submit to the Department a schedule of compliance, a high flow management plan, a response to the 2019 effluent exceedances, a summary and report of the smoke testing, and if available, documentation regarding the discovered discharge pipe by February 28, 2020.

DD. On November 6, 2019, Penn Estates hand-delivered a written response to the Department's April 10, 2019 NOV. Said response acknowledged the effluent violations noted in Paragraph F and provided suspected causes and corrective actions taken. The response also acknowledged the SSOs described in Paragraph H. The response further noted at the time the 7.5 HP transfer pumps were replaced, Penn Estates did not realize the installation of the replacement pumps was a violation of Part A.III.C(1) of the NPDES Permit, described in Paragraph K.

EE. On February 3, 2020, the Department received from Penn Estates the following documents as requested during the November 6, 2019 enforcement conference:

- Schedule of Compliance;
- WWTP Yard Piping Memorandum;
- WWTP Yard Pipe Drawings;
- Smoke Testing Summary and Report;
- High Flow Management Plan and;
- 2019 Effluent Exceedance Memorandum.

FF. Penn Estates again failed to prevent the occurrences of SSOs as reported by Penn Estates' written notifications submitted to the Department, as follows:

Date of Incident	**Location**	**Volume (gallons)**	**Suspected Cause**
January 26, 2020	WWTP: EQ Tank	10,000	Hydraulic Overload

April 13, 2020	WWTP: EQ Tank	15,000	Hydraulic Overload
April 24, 2020	WWTP: EQ Tank	3,000	Hydraulic Overload
April 27, 2020	WWTP: EQ Tank	5,000	Hydraulic Overload
August 4, 2020	WWT: EQ Tank	7,000 gallons	Hurricane Isaias – Hydraulic Overload

GG. Penn Estates' SSOs noted in Paragraph FF, constitute violations of Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), and Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

HH. The violations described in Paragraphs F, I, L, N, T, V, Y, BB, and GG constitute unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611; a statutory nuisance under Section 601 of The Clean Streams Law, 35 P.S. § 691.601; and subject Penn Estates to civil penalty liability under Section 605 of The Clean Streams Law, 35 P.S. § 691.605.

After full and complete negotiation of all matters set forth in this Consent Order and Agreement and upon mutual exchange of covenants contained herein, the parties desiring to avoid litigation and intending to be legally bound, it is hereby ORDERED by the Department and AGREED to by Penn Estates as follows:

1. Authority. This Consent Order and Agreement is an Order of the Department authorized and issued pursuant to Section 5 of The Clean Streams Law, 35 P.S. § 691.5, and Section 1917-A of the Administrative Code, 71 P.S. § 510-17.

2. Findings.

a. Penn Estates agrees that the findings in Paragraphs A through GG are true and correct and, in any matter or proceeding involving Penn Estates and the Department, Penn Estates shall not challenge the accuracy or validity of these findings.

b. The parties do not authorize any other persons to use the findings in this Consent Order and Agreement in any matter or proceeding.

3. Corrective Action.

a. Penn Estates will install and render operational a new facility generator of sufficient capacity and an automated transfer switch capable of maintaining waste water treatment plant operational capability if primary energy source is interrupted. As of the date of this Consent Order and Agreement, Penn Estates has completed this Corrective Action measure.

b. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Manhole Report) and phased manhole rehabilitation plan (Manhole Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Manhole Report shall include an evaluation of 100% of the manholes contained in the collection system with the Manhole Plan addressing manholes from highest to lowest priority.

c. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Gravity Report) and phased gravity collection main rehabilitation plan (Gravity Plan) containing an implementation schedule which will be submitted to the Department for review and

acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Gravity Report shall include an evaluation of 100% of the gravity collection system including inspection reports, mapping and condition rating with the Gravity Plan addressing defects from highest to lowest priority.

d. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Structure Report) and phased wastewater treatment plant structure rehabilitation plan (Structure Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Structure Report shall include an evaluation of all treatment units comprising the wastewater treatment plant with the Structure Plan addressing treatment units from highest to lowest risk of failure.

e. On, or before December 31, 2021, Penn Estates shall install a wastewater treatment plant SCADA system, or similar, capable of monitoring and controlling operational data and functions such as, poly-aluminum chloride, chlorination, methanol, sodium bisulfate feed rates and/or concentrations, to ensure the plant effluent maintains compliance. As of the date of this Consent Order and Agreement, Penn Estates has installed the SCADA system at its WWTP, but rendering the SCADA system operational will require Penn Estates to obtain a permit for the installation of a new upgraded methanol pump and sodium bisulfate pump that is SCADA compatible. Penn Estates submitted an application for a permit for the new SCADA-compatible methanol pump and sodium bisulfate pump to the Department on June 29, 2020, and that permit application is under for review by the Department and awaiting approval.

f. Penn Estates shall submit written progress reports to the Department on a semi-annual basis that document its progress on the completion of the corrective actions in Paragraphs 3.a-e. The reports are due on or before the fifteenth (15th) day of the month following the end of each semi-annual calendar period, i.e., July 15 and January 15. The first progress report is due on or before January 15, 2021.

4. Civil Penalty Settlement. Upon signing this Consent Order and Agreement, Penn Estates shall pay a civil penalty of twenty-five thousand dollars ($25,000.00). This payment is in settlement of the Department's claim for civil penalties for the violations and dates set forth in Paragraphs F, I, L, N, T, V, Y, BB, and GG, above. The payment shall be made by corporate check or the like made payable to the "Commonwealth of Pennsylvania -Clean Water Fund" and sent to Patrick Musinski, Environmental Group Manager, Pennsylvania Department of Environmental Protection, Clean Water Program, 2 Public Square, Wilkes-Barre, PA 18701-1915.

5. Stipulated Civil Penalties.

a. In the event Penn Estates fails to comply in a timely manner with the Corrective Actions listed in Paragraph 3.a.-f. of this Consent Order and Agreement, Penn Estates shall be in violation of this Consent Order and Agreement and, in addition to other applicable remedies, shall pay a civil penalty in the amount of two hundred fifty dollars ($250.00) per day for each violation.

b. In the event Penn Estates violates any DMR related monitoring requirement or permit limit established in NPDES Permit, either instantaneous or DMR related, during the term of this Consent Order and Agreement, Penn Estates shall be in violation of this Consent Order and Agreement and shall pay a civil penalty in the amount of five hundred dollars ($500.00) for each violation.

c. In the event Penn Estates experiences an SSO from any portion of its treatment and conveyance systems (which is limited to treatment and conveyance systems owned and operated by Penn Estates and does not include any Customer Service Line) during the term of this Consent Order and Agreement, Penn Estates shall be in violation of this Consent Order and Agreement and shall pay a civil penalty in the amount of one thousand dollars ($1,000.00) for each violation.

d. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month, and shall be forwarded as described in Paragraph 4 (Civil Penalty Settlement) above.

e. Any payment under this paragraph shall neither waive Penn Estates' duty to meet its obligations under this Consent Order and Agreement nor preclude the Department from commencing an action to compel Penn Estates' compliance with the terms and conditions of this Consent Order and Agreement. The payment resolves only Penn Estates' liability for civil penalties arising from the violations of this Consent Order and Agreement for which the payment is made.

f. Stipulated civil penalties shall be due automatically and without notice.

6. Additional Remedies.

a. In the event Penn Estates fails to comply with any provision of this Consent Order and Agreement, the Department may, in addition to the remedies prescribed herein, pursue any remedy available for a violation of an order of the Department, including an action to enforce this Consent Order and Agreement.

b. The remedies provided by this paragraph and Paragraph 5 (Stipulated Civil Penalties) are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy shall not be deemed to be a waiver of that remedy. The payment of a stipulated civil penalty, however, shall preclude any further assessment of civil penalties for the violation for which the stipulated penalty is paid.

7. Reservation of Rights. The Department reserves the right to require additional measures to achieve compliance with applicable law. Penn Estates reserves the right to challenge any action which the Department may take to require those measures.

8. Liability of Operator. Penn Estates shall be liable for any violations of the Consent Order and Agreement, including those caused by, contributed to, or allowed by its officers, agents, employees, or contractors. Penn Estates also shall be liable for any violation of this Consent Order and Agreement caused by, contributed to, or allowed by its successors and assigns.

9. Transfer of Site.

a. The duties and obligations under this Consent Order and Agreement shall not be modified, diminished, terminated or otherwise altered by the transfer of any legal or equitable interest in the Site or any part thereof.

b. If Penn Estates intends to transfer any legal or equitable interest in the Site which is affected by this Consent Order and Agreement, Penn Estates shall serve a copy of this Consent Order and Agreement upon the prospective transferee of the legal and equitable interest at

least thirty (30) days prior to the contemplated transfer and shall simultaneously inform the Northeast Regional Office of the Department of such intent.

10. Correspondence with Department. All correspondence with the Department concerning this Consent Order and Agreement shall be addressed to:

Clean Water Program Manager
Clean Water Program
Department of Environmental Protection
2 Public Square
Wilkes-Barre, PA 18701-1915
Phone (570) 826-2511
Fax (570) 830-3016

11. Correspondence with Penn Estates. All correspondence with Penn Estates concerning this Consent Order and Agreement shall be addressed to:

Emily Long, Area Manager
Community Utilities, Inc.
570 Hallet Road
East Stroudsburg, PA 18301
Phone 570-424-9322

With copy to:

Diana A. Silva, Esq.
Manko, Gold, Katcher & Fox, LLP
401 City Ave, Suite 901
Bala Cynwyd, PA 19004
Phone 484-430-2347
Fax 484-430-5711
Email dianasilva2@gmail.com

Penn Estates shall notify the Department whenever there is a change in the contact person's name, title, or address. Service of any notice or any legal process for any purpose under this Consent Order and Agreement, including its enforcement, may be made by mailing a copy by first class mail to the above address.

12. Force Majeure. In the event that Penn Estates is prevented from complying in a timely manner with any time limit imposed in this Consent Order and Agreement solely because of a strike, fire, flood, act of God, or other circumstance beyond Penn Estates' control and which Penn Estate, by the exercise of reasonable diligence, is unable to prevent, then Penn Estates may petition the Department for an extension of time. Penn Estates shall be entitled to the benefits of this paragraph if it notifies the Department within five (5) business days by telephone and within ten (10) business days in writing of the date that it becomes aware or reasonably should have become aware of the event impeding performance.

13. Severability. The paragraphs of this Consent Order and Agreement shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

14. Entire Agreement. This Consent Order and Agreement shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communications or prior drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein in any litigation or any other proceeding.

15. Attorney Fees. The parties shall bear their respective attorney fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Order and Agreement.

16. Modifications. No changes, additions, modifications, or amendments of this Consent Order and Agreement shall be effective unless they are set out in writing and signed by the parties hereto.

17. Titles. A title used at the beginning of any paragraph of this Consent Order and Agreement may be used to aid in the construction of that paragraph, but shall not be treated as controlling.

18. Termination. The obligations of this Consent Order and Agreement shall terminate when the Department determines in writing that Penn Estates has complied with the requirements of Paragraphs 3 and 4 above, and the Department determines that it is in the interest of public health, public safety, or the environment to terminate such obligations; such determination shall not be unreasonably withheld and shall be made within a reasonable time (not to exceed five (5) months) after Penn Estates completes the obligations in Paragraphs 3 and 4 above.

19. Execution of Agreement. This Consent Order and Agreement may be signed in counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument. Facsimile signatures shall be valid and effective.

IN WITNESS WHEREOF, the parties hereto have caused this Consent Order and Agreement to be executed by their duly authorized representatives. The undersigned representatives of Penn Estates certify under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this Consent Order and Agreement on behalf of Penn Estates; that Penn Estates consents to the entry of this Consent Order and Agreement as a final ORDER of the Department; and that Penn Estates hereby knowingly waives its right to appeal this Consent Order and Agreement and to challenge its content or validity, which rights may be available under Section 4 of the Environmental Hearing Board Act, Act of July 13, 1988, P.L. 530, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 103(a) and Chapters 5A and 7A; or any other provisions of law. [Signature by Penn Estates' attorney certifies only that the agreement has been signed after consulting with counsel.]

FOR PENN ESTATES UTILITIES INC.:

Name: Steven M. Lubertozzi
Title: President, Community Utilities of Pennsylvania, Inc.

FOR THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION:

B R Patel 10/22/2020
Bharat Patel, P.E.
Clean Water Program Manager

Ann Conserette 10/22/20
Ann Conserette
Assistant Counsel

OCA Exhibit TLF-WW3

Customer Complaint Log

Wastewater Systems

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls					
	2019		2020		2021	
Penn Estates Wastewater System	**thru Dec 31**		**thru Dec 31**		**thru May 10**	
Blocked Sewer/Lateral - Company	0		3		2	
Drainage	1		2		1	
Grinder Pump	2		1		1	
Inspect Repair	3		7		0	
Lateral Blocked	2		4		4	
Lateral Infiltration	1		0		0	
Miscellaneous	1		2		0	
Odor	1		4		2	
Turn Service On/Off	1		0		0	
Damage Restoration	0		2		0	
Septic Tank	1		0		0	
Smoke Testing/Repairs	11		13		0	
Totals		24		38		10
Tamiment System						
Blocked Sewer/Lateral - Company	0		2		0	
Sewer Backup - Co. (valve closed)	0		0		4	
Grinder Pump	0		14		3	
Lateral Blocked	2		1		1	
Odor Company WWTP/PS	0		3		1	
Turn Service On/Off	0		1		0	
Totals		2		21		9
UIP Wastewater System						
Blocked Sewer/Lateral - Company	0		2		1	
Grinder Pump	2		1		0	
Lateral Blocked - Customer	1		4		0	
Manhole Cover - Repair	0		1		0	
Odor Company WWTP/PS	2		1		0	
WWTP & Pump Station Light	0		0		2	
Totals		5		9		3

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Direct Testimony, OCA Statement 4, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DA TED: August 13, 2021
*315549

Signature: _____
Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

CUPA W STATEMENT NO. 1-R

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

REBUTTAL TESTIMONY

OF

J. BRYCE MENDENHALL

WATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Direct Testimony of J. Bryce Mendenhall (Water)

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A: My name is J. Bryce Mendenhall. I am the President of Community Utilities of Pennsylvania Inc. ("CUPA" or "Company"). My business address is 500 W Monroe, Suite 3600, Chicago, Illinois 60661.

Q: **ARE YOU THE SAME J BRYCE MENDENHALL WHO SPONSORED DIRECT TESTIMONY IN THIS PROCEEDING?**

A: Yes.

Q: **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A: The purpose of my testimony is to respond to certain issues discussed in the direct testimony of Bureau of Investigation ("I&E") witness Mr. Esyan Sakaya (I&E Statement No. 3) specifically related to "Unaccounted-For" or "Non-Revenue" Water.

Q: **HAVE YOU REVIEWED THE FILED DIRECT TESTIMONY OF I&E AND OCA?**

A: Yes

Q: **DO YOU AGREE WITH WITNESS SAKAYA'S DEFINITION AND CAUSES OF UNACCOUNTED-FOR WATER?**

A: Generally, although the witness does not consider acceptable water losses associated with the operation of a water distribution system. For example, there is an "allowable leakage" component to a water distribution system even when placing new lines in service. In other words, a water distribution system is never 100% leak free and therefore always has some

percentage of leakage before considering Witness Sakaya's primary causes of "unaccounted-for" water.

Q: **DOES THE AMERICAN WATERWORKS ASSOCIATION (AWWA) SUPPORT THE USE OF A UNIVERSAL THRESHOLD FOR DISALLOWING RECOVERY OF NON-REVENUE WATER EXPENSES AS REPRESENTED IN WITNESS SAKAYA'S TESTIMONY?**

A: No. In an AWWA Water Loss Control Committee report published January 2020[1]:

> AWWA recommended against setting loss reduction goals around specific targets such as "less than 20%", recognizing that loss reduction targets are best tailored as system-specific goals for each water utility rather than a "one size fits all" approach.

AWWA recommends that the industry stop using percentage indicators:

> [T]here is still confusion as evidence by:
>
> Inquiries received by AWWA from the regulatory community and other stakeholders seeking "acceptable" water loss percentage level.
>
> Publications on water loss that refer to the "AWWA Standard of __% - the "standard" listed as anything from 5% to 20%. These misrepresentations, often derived anecdotally, come from technology and service providers, regulatory agencies, environmental groups, and water utilities. Since 2003, AWWA has recommended that it is best for utilities to set system-specific loss targets, and not use a prescribed one-size-fits-all number.

Q: **WHAT SPECIFICALLY DOES AWWA RECOMMEND?**

[1] Key Performance Indicators for Nonrevenue Water – AWWA's 2020 Position, AWWA Water Loss Control Committee Report (Jan. 2020).

A: AWWA recommends that water utilities, regulatory agencies and other industry stakeholders discontinue use of VPPI [Volumetric Percentage Performance Indicator] or "unaccounted-for" water percentage indicators. In the January 2020 issue of Journal AWWA, the AWWA Water Loss Control Committee issued a report titled "Key Performance Indicators for Nonrevenue Water – AWWA's 2020 Position," which I have attached hereto as Mendenhall Rebuttal Exhibit No. 1. The report concludes as follows:

> 'The traditional use of single NRW percentage loss indicator, or "unaccounted-for" water percentage--which is imprecise—continues to bring more confusion than coherence to water loss assessments. This method has never been successful in motivating sustained, measurable loss reductions.'[2]

Instead of using arbitrary percentage loss indicators, the AWWA's Water Loss Manual states the following:

> 'Thresholds for compliance should be based on well-founded rationales that yield actionable information and recognize benefit-cost analysis to evaluate alternative activities for achieving compliance, such as those described in this manual. Such rationales are preferred over arbitrary, less meaningful parameters like universal or percentage-based triggers. The method of calculation for the applicable parameters should be clearly stated.'[3]

The Company is, in fact, implementing AWWA-recommended measures against non-revenue water, including reviewing existing data, validating water balance data, making improvements for water loss control via the following:

---

[2] Key Performance Indicators for Nonrevenue Water – AWWA's 2020 Position, AWWA Water Loss Control Committee Report (Jan. 2020).

[3] AWWA Manual 36 at 15 (4th Ed. 2016)

i. Meter change out program

ii. Meter testing program

iii. Regular monthly review of vacancy and zero consumption reports

iv. Recording line breaks/leaks in the Company's Operational Management Software (OMS) so that our GIS division can create critical heat maps to visualize areas for capital project investment.

In other words, the Company is taking proactive steps to reduce non-revenue water consistent with AWWA recommendations and should not be penalized based on a percentage-based threshold that AWWA has explicitly rejected.

Q: **YOU STATE THAT THE AWWA RECOMMENDS AGAINST USING AN ARBITRARY THRESHOLD TO MEASURE A UTILITY'S NON-REVENUE WATER PERFORMANCE. IN THE ABSENCE OF I&E OR THE COMMISSION USING A THRESHOLD, WHAT DO YOU RECOMMEND?**

A: I believe that the Company's non-revenue performance should be evaluated consistent with the AWWA's recommendations, including recognizing the benefit-cost analysis to evaluate alternatives for achieving compliance. While the Company is taking measures to actively address non-revenue water, infrastructure investigations, repairs and replacements can be extremely expensive, and these costs would be passed along to the customers. To assist in providing some perspective to the cost determinations, the below Table 1 summarizes the 3 systems listed by Witness Sakaya and the estimated cost of helium leak detection study to identify the extent of leaks in the distribution system. The estimated cost is based on a cost-per-linear foot as experienced by the Company's North Carolina affiliate in implementing similar studies in 2019. As shown, the leak detection studies

alone would cost more than the annual cost of non-revenue water above the Commission's threshold, without consideration for the follow-up costs to repair or replace leaking water lines. It should also be noted that a leak detection study is not guaranteed to identify any and all water losses that lead to non-revenue water above a certain threshold, and therefore would not guarantee significant mitigation on its own, but such efforts would be an essential early step in addressing non-revenue water.

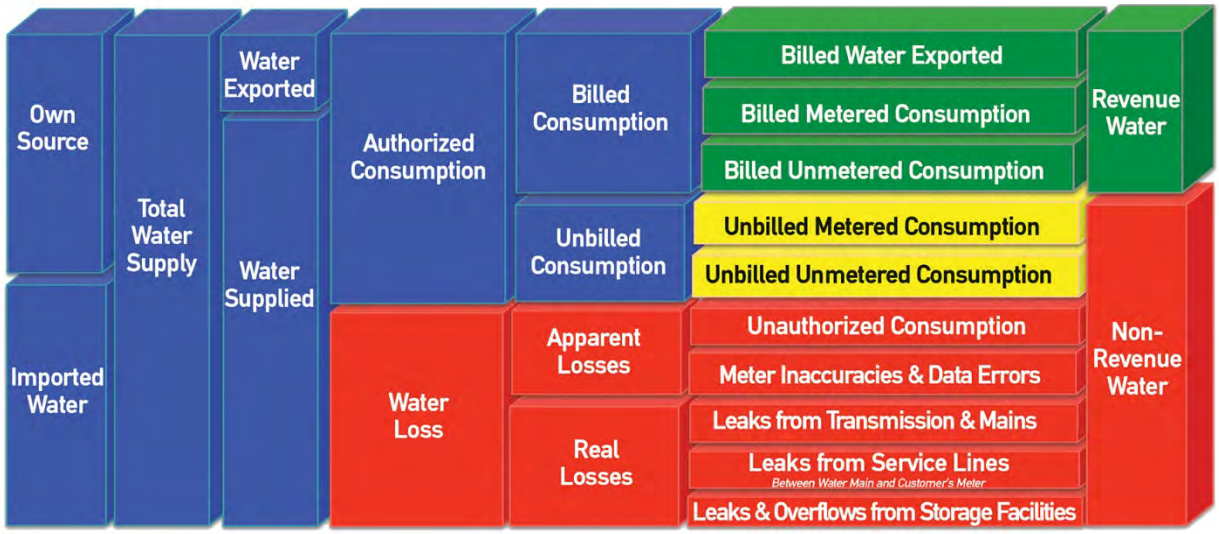
TABLE 1				
Business Unit	Non-Revenue Water Rate	Feet of Main	Connections	Leak Detection Cost ($0.59/ft)
Tamiment	58.02	64,182	511	$ 37,867.00
Penn Estates	21.95	135,325	1731	$ 79,841.00
Westgate	10.13	77,328	985	$ 45,323.00

A more reasonable approach than requiring all of a utility's systems to achieve a 20% non-revenue or "unaccounted-for" water target—and one that would be consistent with the AWWA's recommendations—would be to set goals for each system and to evaluate the Company's efforts towards reducing non-revenue water. In exchange for disallowing adjustments for main breaks/leaks or non-revenue water exceeding the Commission's 20% policy statement, the Company would perform system water audits that concentrate on the following tasks:

Task 1: Review of existing Water Audits and Water Audit Relevant Date

Task 2: Validation of Water Balance Data and Recommendation for Bottom-Up Data Validation

Task 3: Preparation of AWWA Water Balance:



Task 4: Recommendations for Water Loss Control Infrastructure

Task 5: Field Leak Detection

Q: **I & E WITNESS SAKAYA PROPOSES A $30,751 ADJUSTMENT TO REMOVE THE COST OF EXCESS UFW. DO YOU AGREE WITH THIS ADJUSTMENT?**

A: No. As described in my rebuttal testimony to this point, the Company has made, and will continue to address non-revenue water in its respective systems and should not be bound by a set percentage of allowable loss. The cost required to mitigate "UFW" in all three systems would be inherently more than the adjustment itself and the customers would bear the burden of capital infusion to meet the Commission's 20% threshold.

Q: **DOES THIS CONCLUDE YOUR PREPARED REBUTTAL TESTIMONY?**

A: Yes, however I reserve the right to supplement or make corrections to this testimony.

Mendenhall Rebuttal Exhibit No. 1

Mendenhall Rebuttal Exhibit No. 1

Committee Report: Key Performance Indicators for Nonrevenue Water—AWWA's 2020 Position

AWWA Water Loss Control Committee

Key Takeaways

Water utilities use performance indicators in their efforts to control water loss.

Citing flaws in traditional percentage indicators for nonrevenue water, AWWA favors other indicators—some in development, some already in use.

AWWA outlines criteria for evaluating key performance indicators in its 2020 position statement.

Layout imagery by Andrey_Popov, greenaperture, Lotus_studio/Shutterstock.com

Mendenhall Rebuttal Exhibit No. 1

Since 2003, AWWA's Water Loss Control Committee (WLCC) has encouraged utilities and other stakeholders to assess and control water loss using the nonrevenue water (NRW) key performance indicators (KPIs) outlined in AWWA Manual of Water Supply Practices M36, *Water Audits and Loss Control Programs* (4th edition, 2016) and the associated Free Water Audit Software (FWAS; version 5.0, 2014).

However, on the basis of potential new indicators and a growing concern about the use of percentage indicators, the WLCC recently reviewed these KPIs, ultimately concluding that AWWA would no longer support NRW percentage indicators and would instead support adding two new KPIs—the loss cost rate and normalized water losses indicator—to AWWA's existing array of KPIs.

The process used to reach these conclusions and how they should be interpreted and used by utilities and other stakeholders is outlined in this report.

Background

Drinking water utilities are challenged by deteriorating infrastructure, growing customer expectations, new regulatory requirements, and a changing climate. Recognizing that "what gets measured gets managed," water utilities rely on performance indicators that are "actionable" to drive improvements in their operations.

Water loss control includes the efforts of water utilities to minimize NRW, which consists of real (physical) losses, largely leakage; apparent (nonphysical) losses that result in customer underbilling; and unbilled, authorized consumption. AWWA recommends that water utilities use a best-practice water audit method described in M36. AWWA's FWAS spreadsheet can be used to apply this method and a forthcoming version (6.0), is planned for release in 2020. AWWA also supports the use of annual water audits by water utilities in its Metering and Accountability Policy Statement (available at www.awwa.org). These tools and policies guide water utilities in quantifying water losses; evaluating cost-effective loss control actions; and demonstrating to regulators, customers, and other stakeholders that utilities are responsible stewards of the valuable water resources and money they manage.

Thousands of water utilities have used AWWA tools to compile a reliable water audit and implement effective loss control practices; this approach is now required in several US states and at least one Canadian province. A large body of reliable water audit data has been collected from water utilities, and analysis of the data provides evidence of the types, extent, and costs of losses occurring in North America.

The traditional use of a single NRW percentage loss indicator, or "unaccounted-for" water percentage—which is imprecise—continues to bring more confusion than coherence to water loss assessments. This method arguably has never been successful in motivating sustained, measurable loss reductions. The AWWA water audit method includes an array of KPIs that represent both traditional and new, more insightful ways to evaluate NRW. While the current FWAS includes effective KPIs, it still uses two percentage indicators, although this is now considered to be a weakness by the WLCC.

With the development of version 6.0 of the FWAS, the WLCC determined that it was time to reevaluate its position on NRW KPIs. The committee believed that new KPIs were superior to percentages for water loss management and, in 2015, launched the Performance Indicators Task Force (PITF) to evaluate the acceptability of historically used KPIs and recommend the appropriate set of NRW KPIs to use going forward—i.e., AWWA's 2020 position.

The PITF included WLCC leadership and members representing a broad spectrum of water industry professionals and affiliations. It conducted research and evaluated traditional and contemporary NRW KPIs, which served as the basis of the 2020 position. The newly recommended slate of KPIs will appear in version 6.0 of the FWAS, the 2020 AWWA Benchmarking Survey, and the next edition of M36.

The decisions formulated by the PITF in guiding the new WLCC position include three recommendations (refined as position statements in the section titled "AWWA's 2020 Position"):

- Discontinue support for any percentage performance indicator, including the volumetric percentage performance indicator (VPPI), often expressed as an "unaccounted-for" water percentage, the financial percentage performance indicator (FPPI), and others structured as a percentage.
- Promote certain existing and two new KPIs—the loss cost rate (LCR) and normalized water losses—to use specifically in place of percentage indicators.

A large body of reliable water audit data has been collected from water utilities, and analysis of the data provides evidence of the types, extent, and costs of losses occurring in North America.

> Nonrevenue water management has been historically hindered by the longstanding misconception that assessments can be reliably conducted using a single key performance indicator.

- Guide water utilities, regulatory agencies, and other stakeholders in using and interpreting AWWA's entire array of NRW KPIs in a manner that meets their situational needs.

The process leading to these recommendations is described next, along with guidance for implementing them. The WLCC's 2020 position is seen as the important next step in the evolution of water loss control advancement for the North American drinking water industry.

The Task Force Establishes KPI Criteria

The PITF established four criteria for the NRW KPIs advocated in AWWA's 2020 position. The KPIs should be

- technically rigorous, reflecting field observations and theoretical principles, without significant bias or influence from situational parameters;
- easily understood by a wide range of stakeholders, including water utilities, regulatory agencies, customers, elected officials, and the media;
- suitable for target-setting and monitoring of progress in loss reduction activities—i.e., they must be actionable; and
- suitable for the state of readiness of North American water utilities and regulatory agencies, recognizing that some water utilities will be new to water loss control and that regulatory agencies need straightforward ways to collect water audit data and loss control monitoring that can be readily implemented.

No KPI in the recommended suite is expected to satisfy all four of these criteria; however, they are all technically rigorous and suitable for the preparedness of North American water utilities and regulatory agencies. Some KPIs are specifically suited for setting loss reduction targets, while others are fit for benchmarking comparison, operational efficiency, or financial efficiency. Certain KPIs are expected to resonate with nontechnical stakeholders, while others have strong appeal for regulatory agencies. Most importantly, the AWWA water audit method features a full array of KPIs that, when applied collectively, provide a better understanding of the occurrence of NRW and its costs in utility operations than what has been previously available. Loss control activities are reliably planned and conducted when using the full suite of NRW KPIs in the AWWA water audit method. This is significant because NRW management has been historically hindered by the longstanding misconception that assessments can be reliably conducted using a single KPI (percentage or otherwise).

The PITF knew the KPIs needed to be both technically astute and understood by a range of stakeholders. The task force began with an understanding that percentage indicators are technically weak because they are distorted by changing customer consumption levels, causing percentages to be easily misunderstood. Additionally, percentages are not actionable, so setting goals involving lower percentages does not easily translate into saving water, reducing production costs, or gaining revenue. Certain NRW KPIs must be actionable or able to be used for translating loss reduction efforts to measurable savings in water and money. In moving beyond percentage indicators, the drinking water industry will also move beyond the misconception that a utility's loss standing can be assessed using any single KPI. Like financial performance and drinking water quality, comprehensively assessing a utility's water loss requires multiple parameters and KPIs to objectively provide direction.

NRW KPIs must be applicable to the current state of readiness of water utilities and North American regulatory agencies to implement. However, because many water utilities are unfamiliar with AWWA methods and tools, KPIs and their implementation must be easily grasped by staffs at water utilities of all sizes, albeit with moderate training to understand the methods.

The features of the 2020 position will be included in version 6.0 of the FWAS and the next (fifth) edition of M36 (targeted for 2021). Incorporating the 2020 position into AWWA's key water loss control publications will support the drinking water industry for the next five years or so, but additional improvements in the water audit process and data collection software platforms are already being planned.

AWWA-Funded Research on NRW Performance Indicators

Current and new NRW KPIs were examined using the PITF's four criteria as described here and in the Technical and Educational Council (TEC) 2019 project report, *Assessment of Performance Indicators for Nonrevenue Water Target Setting and Progress Tracking.* Three tasks were requested of this research:

- Explore a list of KPIs to evaluate and control NRW, including those suited for setting water loss control targets.

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- Analyze prospective KPIs using validated water audit data, including data from California and Georgia and an enhanced version of the AWWA Water Audit Data Initiative, known as the WADI Plus data set (see the Water Research Foundation's 2019 project 4695, *Guidance on Implementing an Effective Water Loss Control Plan*).
- Survey several US state and Canadian provincial regulatory entities that have implemented water loss control regulations and that document the key characteristics of their programs, including how they use NRW KPIs.

The core methodology of the research assessed each indicator for the four criteria, using a mix of quantitative and qualitative scoring. Technical rigor was assessed using the frontier analysis method, which predicts relative performance for utilities in a similar mathematical situation. For example, if an indicator measuring real losses is well correlated with real loss performance from the frontier analysis, that indicator is considered technically rigorous.

The final TEC project report presented a recommended set of NRW KPIs and a rationale for phasing in, or out,

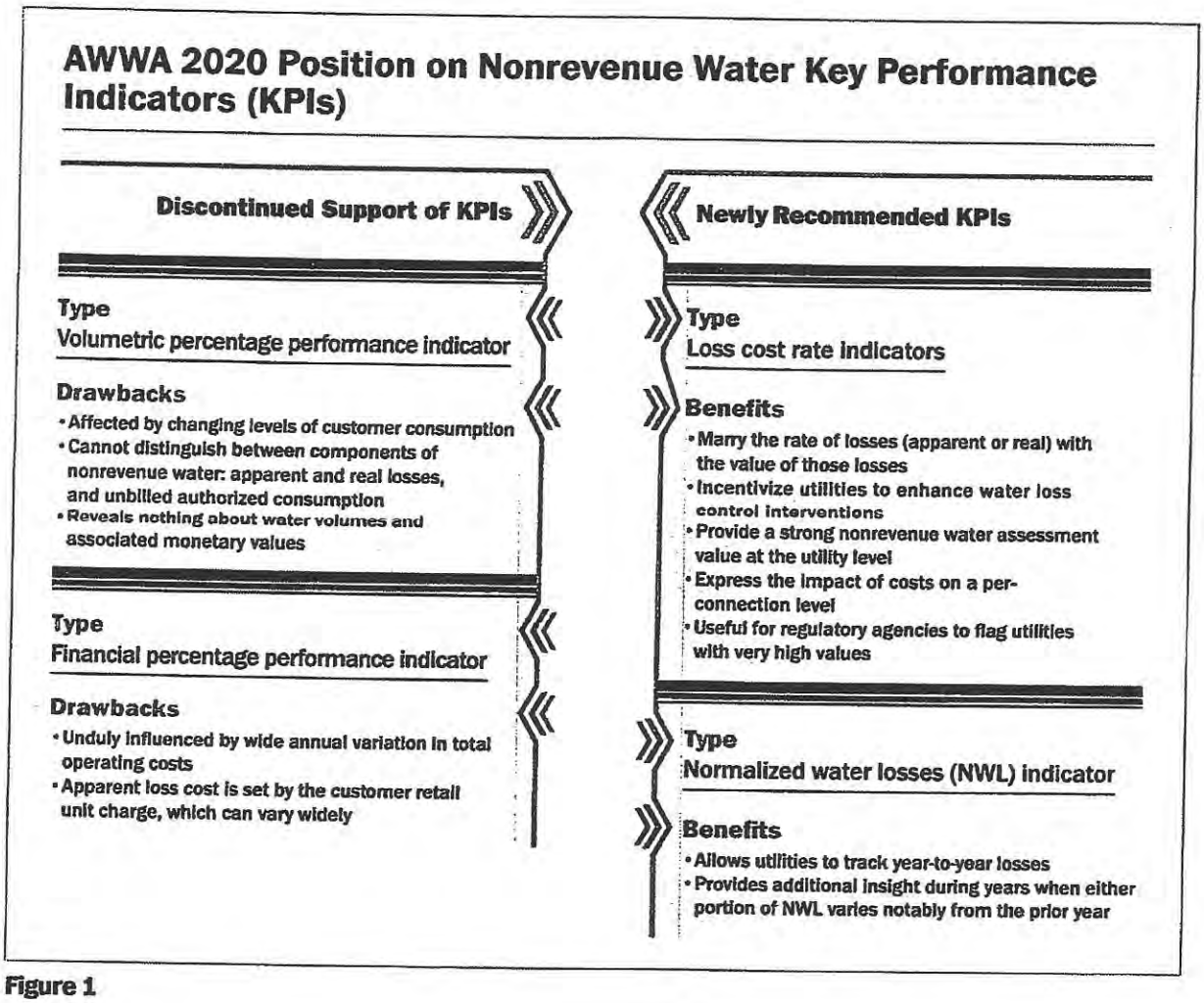

Figure 1

certain indicators. The research provided objective assessments of NRW KPIs and provided the foundation of the WLCC's new position.

AWWA's 2020 Position

Since 2003, AWWA has advocated using the NRW KPIs included in M36 and FWAS for water loss assessments and loss control planning. Informed by the TEC report and its member deliberations, the PITF recommended a new position on NRW KPIs, along with specific guidance on their use. Three primary changes to the KPIs were recommended (summarized in Figure 1):

- AWWA no longer supports any form of NRW percentage KPIs, including volumetric indicators such as water loss percentage indicators, "unaccounted-for" water percentages, and financial percentage indicators.
- AWWA supports the use of the LCR indicator, a new KPI expressed in value per service connection per year, with one expression for apparent losses and one for real (leakage) losses. These KPIs measure the negative impact of losses on a utility's finances.
- AWWA supports the use of the normalized water losses indicator, a new KPI expressed in volume per service connection per day. *Water losses* is the sum of apparent losses and real losses. It is meant to be used only as a high-level indicator and in tandem with the disaggregated normalized KPIs: normalized apparent loss (volume per service connection per day) and normalized real loss (volume per service connection per day).

Each of these changes is discussed further in the following sections.

AWWA's Discontinued Support of NRW Percentage Indicators

Percentages are problematic because their fractional components (numerator and denominator) can be unduly influenced by factors unrelated to water loss control activities. The basis for discontinuing support for them is twofold.

First, the KPI known as the volumetric percentage performance indicator (VPPI), often expressed as the "unaccounted-for" water percentage, is a misleading and unreliable measure of utility performance for three reasons: (1) VPPI is greatly affected by changing levels of customer consumption, (2) VPPI cannot distinguish the components of NRW (apparent and real losses, and unbilled authorized consumption), and (3) VPPI reveals nothing about water volumes and associated monetary values—the two most important factors in assessing a utility's water efficiency. Furthermore, percentage indicators like VPPI are not technically rigorous because they can be significantly influenced by parameters unrelated to NRW.

It is important to note that AWWA recommends that water utilities, regulatory agencies, and other industry stakeholders discontinue use of a VPPI or "unaccounted-for" water percentage indicator.

Second is the financial percentage performance indicator (FPPI). This indicator has limitations as a result of similar undue influences on the numerator and denominator—in particular, wide annual variation in total operating costs (denominator), which are common for some water utilities as reported in AWWA's 2019 *Assessment of Performance Indicators for Nonrevenue Water Target Setting and Progress Tracking*. Also, the apparent loss cost—a component of the FPPI—is set by the customer retail unit charge (CRUC), which can vary widely because while some water utilities include sewer charges in the CRUC, many do not.

This KPI has been used formally in a regulatory context in a single US state (the only such use of this KPI known to the PITF), which uses it as both a performance tracking indicator and a target-setting indicator. By removing its support for the FPPI, AWWA recognizes that an alternative financial indicator is needed; the LCR KPI is offered for consideration by regulatory agencies because, as a KPI, it's superior to the FPPI. AWWA believes that water utilities should not employ the FPPI or any percentage KPIs in water loss assessments.

To this end, AWWA is removing all percentage indicators from its water loss publications and tools, including the next (fifth) edition of M36 and the next version (6.0) of its FWAS. AWWA instead recommends adding two alternative KPIs, which are described in the next sections (and summarized in Figure 2).

AWWA's Support of LCR

An alternative KPI is the LCR, mentioned earlier. Expressed in dollars per service connection per year, the LCR is a financial KPI, with one expression for apparent losses and one for real losses. The LCR indicates the financial impact of the respective losses to the utility and has public relations value by expressing annualized loss costs (operating cost and revenue) on a per-connection basis. It is derived from each corresponding normalized volumetric loss indicator expressed in volume per connection per day, by converting the volume unit to its value of loss, expressed on a yearly basis. This KPI marries the rate of losses (apparent or real) with the value of those losses as a cost rate of losses. Utilities with a high LCR incur high losses and/or high costs. On a broad level, high LCR values give a water utility good incentive to enhance their water loss control interventions.

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Following are some positive attributes of an LCR:

- It has strong NRW assessment value at the utility level by revealing the impact of changing loss and cost values year to year.
- It helps public relations by expressing the impact of costs on a per-connection level for easier comparison with other systems.
- It is useful for regulatory agencies when it's used as an out-of-bounds KPI to flag utilities with very high values. However, it is not appropriate to employ the LCR to set optimally low loss targets in water utilities.

PITF members have piloted and analyzed the LCR in several efforts, including the 2018 TEC project and independent work on water audit data from Pennsylvania (https://on.nrdc.org/2VxXwew) and New Jersey (https://on.nrdc.org/2pnWSoc). The Water Research Foundation's Project 4695 includes a downloadable spreadsheet of LCR values from North America in the form of percentiles for the range of values across utilities. LCR should further help water utilities and other stakeholders assess and manage water loss.

While the LCR has many strengths, it is a high-level KPI and stakeholders are advised not to employ the LCR as a singular KPI for water loss assessments. Because it's influenced by the volume of losses and their monetary value, the LCR could change notably as a result of a significant change in a single component. For instance, an annual reduction in loss volumes (apparent or real) may be masked by a large monetary increase that year, either because of a large water rate increase (CRUC) or increase in the variable production cost. In this way the LCR is not directly actionable as a target setting or benchmarking KPI. It is appropriate to assess the LCR in combination with the other KPIs in the AWWA water audit method.

AWWA's Support of Normalized Water Losses Indicator

A second alternative KPI is normalized water losses (NWL).

Figure imagery by Luria, SlipFloat/Shutterstock.com.

Figure 2

Expressed in volume per connection per day, NWL is a high-level KPI that represents the combined volume of apparent and real losses occurring in the water utility on a per-connection basis. The NWL metric allows utilities to track their year-to-year losses and provides additional insight during years when either portion of NWL (apparent or real normalized loss rate) varies notably from the prior year. NWL should not be used as a stand-alone KPI, but in combination with the apparent and real loss normalized indicators. Also, as a high-level indicator, NWL is not actionable because its components include water that is physically lost (real losses) and water that is not physically lost but under-recorded (apparent losses). Thus, NWL should not be used for target-setting. Instead, targets can be set using the normalized apparent and real loss indicators. NWL is best used in the data validation process by helping broadly explain year-to-year changes in apparent and real loss volumes and provide a buffer against inordinate uncertainty in either of these volumes.

> AWWA recommends that water utilities, regulatory agencies, and other industry stakeholders discontinue use of a VPPI or "unaccounted-for" water percentage indicator.

NWL is new and has not yet been employed extensively. As a combined version of the normalized apparent losses and normalized real losses indicators, NWL is subject to the same influencing factors as those KPIs. AWWA believes that NWL—used for high-level trending in combination with other KPIs—adds value to water loss assessments.

Incorporating the New KPIs in the Free Water Audit Software

Concurrent with the PITF's efforts to update its position on NRW KPIs, the WLCC Software Subcommittee worked to develop version 6.0 of the FWAS. The PITF coordinated with the subcommittee to include LCR (apparent and real forms) and NWL in version 6.0 of the FWAS. Version 6.0 will include many additional improvements.

Guidance for NRW KPI Implementation

Since the launch of the FWAS in 2006, Georgia, California, Hawaii, and the province of Quebec have required utilities to use the AWWA water audit method and the FWAS as the data collection tool. These initiatives have formal programs that include training for water utilities in the water audit process, including data collection, validation, and analysis. The data quality of these programs is distinctly higher than programs that accept self-reported data from water utilities. Regulatory agencies requiring water audit data collection are urged to employ the AWWA FWAS and provide training for utility auditors and formal validation of the reported water audits. Several states have leveraged set-aside funds from their state revolving fund programs to pay for training and validation.

The FWAS is used with lesser requirements in many other states and agencies, including Tennessee, New Mexico, Colorado, and the Delaware River Basin Commission, with pilot projects occurring in at least another six states. Data from thousands of water audits that were compiled using the FWAS are now available, and analysis of the data has provided deeper understanding of utility water efficiency than historic approaches using only a single percentage indicator. Additional water regulatory agencies are expected to adopt requirements for the AWWA water audit method because it enables more rational assessments, improved NRW reduction tracking, and benchmarking among water utilities. With a suite of effective KPIs available in the AWWA tools, agencies can use appropriate combinations to meet their water efficiency objectives. Table 1 describes the KPIs of the 2020 position, along with their suitability for specific purposes and their limitations.

Benefits for the Water Industry

The water industry's approaches of the past 60 years that have relied on imprecise, "unaccounted-for" water percentages have not been successful in motivating measurable loss reductions. Consequently, losses have been increasing in some systems as a result of deteriorating infrastructure (distribution system piping and customer water meters), increasing costs, and other factors. AWWA has advanced water auditing and loss control technologies considerably over the past 20 years, and it believes that these newer approaches are improving water utilities' ability to assess their water loss control standing, plan and execute effective loss reductions, and communicate this progress to stakeholders and customers. The improved outcomes for society include improved

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management of water resources; improved utility operations and finances; consistent reporting and workable planning for loss control activities; and better understanding of water utility performance by customers, the media, elected officials, funding agencies, and other stakeholders.

Multiple benefits are available to drinking water utilities via effective water loss control. It's time for

2020 AWWA Water Audit Method Outputs and Key Performance Indicators: Uses and Limitations

Indicator	Description	Suitable Purposes	
		Assessment	Benchmarking
Attribute			
Apparent loss volume	Calculated by FWAS	✓	
Apparent loss cost	Calculated by FWAS	✓	
Real loss volume	Calculated by FWAS	✓	
Real loss cost	Calculated by FWAS	✓	
Unavoidable annual real loss	Calculated by FWAS	✓	
Volume			
Normalized apparent Losses (volume/connection/day)	Strong and understandable indicator for multiple users	✓	✓
Normalized real losses (volume/ connection/day)	Strong and understandable indicator for multiple users	✓	✓
Real losses (volume/ pipeline length/day)	Strong and understandable indicator for use by utilities with low connection density	✓	✓
Normalized water losses (volume/ connection/day). **New KPI**	Strong and understandable indicator, suitable for high-level performance measurement	✓	
Real losses by pressure (volume/ connection /day/pressure unit)	Robust, specialized indicator; technical rigor may be influenced by network materials	✓	✓
Infrastructure leakage index	Robust, specialized ratio KPI; can be influenced by pressure and connection density	✓	✓
Value			
Apparent loss cost rate (value/ connection/year). **New KPI**	Indicators with sufficient technical rigor; provide the unit financial value of each type of loss, which is very useful for planning and assessment of cost efficiency of water loss reduction and control interventions and programs	✓	
Real loss cost rate (value/ connection/year). **New KPI**		✓	
Validity			
Data validity tier[a]	Strong indicator of water loss audit data quality if data have been validated; tier provides guidance on priority areas of activity	✓	✓

FWAS—AWWA Free Water Audit Software

[a]*Data validity tier* is a new term that will appear in Version 6.0 of the FWAS (2020 release) and is a band-type grouping of data validity scores (DVS): of audit reliability.

DVS should not be used to quantitatively indicate accuracy for the audit outputs.

Table 1

additional water utilities and regulatory agencies to follow the example of the water utilities and state/provincial regulatory agencies that have embraced AWWA's water audit method.

Improved Water Loss Monitoring

AWWA has carefully investigated existing and new NRW key performance indicators and has recommended an updated set of KPIs for water utilities, regulatory agencies, and

Target-Setting	Planning	Tracking	Uses and Limitations	Principal Users
		✓	Assess loss level	Utilities, regulators
		✓	Assess loss cost level	Utilities, regulators
		✓	Assess loss level	Utilities, regulators
		✓	Assess loss cost level	Utilities, regulators
		✓	Reveal theoretical technical low level of leakage	Utilities, regulators
✓	✓	✓	Used for performance tracking and target-setting	Utilities, regulators, policy makers
✓	✓	✓	Used for performance tracking and target-setting	Utilities, regulators, policy makers
✓	✓	✓	Data collection and assessment of systems with low connection density	Utilities, regulators, policy makers
		✓	High-level indicator for trending analysis; not appropriate for target-setting or benchmarking	Utilities, customers
	✓	✓	Data collection and assessment of pressure level	Utilities
		✓	Benchmarking after pressure management is implemented	Utilities
	✓	✓	Data collection and assessment on AWWA indicators or contextual parameters to use in conjunction with loss cost rates	Utilities, regulators, customers
	✓	✓		Utilities, regulators, customers
	✓	✓	Assess caliber of data inputs of the water audit	Utilities, regulators

Tier I: DVS = 0–25; Tier II: DVS = 26–50; Tier III: DVS = 51–70; Tier IV: DVS = 71–90; Tier V: DVS = 91–100. The data validity tier is a broad indicator

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Multiple benefits are available to drinking water utilities via effective water loss control.

other water industry stakeholders. Of particular note is the recommendation to discontinue support for percentage indicators, which are known to be imprecise and misleading. AWWA advises water industry stakeholders to stop using percentage indicators and embrace those existing and new performance indicators recommended by AWWA. This development will greatly improve the ability of drinking water utilities to identify, quantify, and value water losses, as well as to target actions to advance the efficiency of water supply operations and management of water resources.

About the Authors

This report was prepared by the AWWA Water Loss Control Committee. The primary authors were **George Kunkel,** principal of Kunkel Water Efficiency Consulting in Hershey, Pa.; **Gary B. Trachtman,** principal water engineer at Arcadis US Inc. in Birmingham, Ala.; **Alan Wyatt,** an independent consultant in Chapel Hill, N.C.; and **Will J. Jernigan,** director of water efficiency for Cavanaugh Solutions in Winston-Salem, N.C.

https://doi.org/10.1002/awwa.1428

AWWA Resources

- Water Loss Control: Actionable Accountability Has Evolved Over the Decades. Trachtman, G.B. & Kunkel, G., 2019. *Journal AWWA,* 111:8:79. https://doi.org/10.1002/awwa.1347.
- Detecting and Resolving Apparent Loss With Data Science. Mohanakrishnan, J.; Boyle, C.; & Poff, J.G., 2019. *Journal AWWA,* 111:2:13. https://doi.org/10.1002/awwa.1230.
- Make Water Loss Control a Priority. Mosburg, S. & Jernigan, W., 2017. *Opflow,* 43:8:6. https://doi.org/10.5991/OPF.2017.43.0052.

These resources have been supplied by *Journal AWWA* staff. For information on these and other AWWA resources, visit www.awwa.org.

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

CUPA W STATEMENT NO. 2-R

REBUTTAL TESTIMONY

OF

PERRY BROWN

REVENUES, EXPENSES, AND RATE BASE

WATER DIVISION

Contents

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Introduction

Q. ARE YOU THE SAME PERRY BROWN THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING ON JUNE 11, 2021, ON BEHALF OF COMMUNITY UTILITIES OF PENNSYLVANIA ("CUPA") OR ("THE COMPANY") WATER DIVISION?

A. Yes.

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF PENNSYLVANIA PUBLIC UTILTIY COMMISSION'S BUREAU OF INVESTIGATION AND ENFORCEMENT ("I&E") AND THE OFFICE OF CONSUMER ADVOCATE?

A. Yes, I have.

Q. DO YOU HAVE ANY MATTERS THAT YOU WOULD LIKE TO ADDRESS IN REBUTTAL?

A. Yes. There are several items discussed in the testimony of OCA and I&E to which I would like to respond.

Forfeited Discounts

Q. I&E WITNESS WALKER RECOMMENDS CUPAD INCREASE FORFEITED DISCOUNT BY THE SAME INCREASE GRANTED BY THE COMMISSION HOW DO YOU RESPOND?

A. The Company accepts this recommendation and will adjust its forfeited discount to reflect the same increase percentage approved by the Commission.

Salaries

Q. OCA WITNESS SHERWOOD RECOMMENDED THAT CUPA BE LIMITED TO A 3% INCREASE FOR SALARY AND WAGES. HOW DO YOU RESPOND?

A. OCA Witness Sherwood reduced salary expenses by year to reflect a three percent salary increase on the basis that it was reasonable. Sherwood's approach is not reasonable and inconsistent with the FPFTY. Sherwood states three percent is reasonable but provides no data to support her position – without support this proposed three percent adjustment should be excluded. *Id.* The three percent is a previous internal budgeting guidepost that does not account for newly created positions or promotions. The Company has provided support that the actual annual merit increases have exceeded 3% recommended by OAC over the last 4 years.

Table 1
Midwest/MidAtlantic Annual Salary Increase

	2018	2019	2020	2021	4 Year Average
Increase %	5.42%	3.62%	4.52%	4.23%	4.45%

OCA witness Sherwood adjusts the Company's claim for 2022 salary by removing merit increases for all vacant positions. The Company agrees with these adjustments. The removal will reduce the Company's claim for salaries and wages by $1,205.

Q. WHAT IS CUPA'S ADJUSTED CLAIM FOR SALARIES AND WAGES FOR THE FPFTY.

A. The Company's claim for salary and wages for the FPFTY should reflect an expense amount of $396,996.

Employee Benefits

Q. PLEASE EXPLAIN I&E WITNESS WALKER'S ADJUSTMENT TO EMPLOYEE PENSION AND BENEFITS?

A. Walker recommends a reduction of $32,576 to the Company's FPFTY claim for Employee Pension and Benefits expense. Walker's recommendation is based this adjustment on the historical decline of employee pensions and benefits expense as a percentage of the Company's salaries and wages expense over the last three years.

Q. DO YOU AGREE WITH I&I WITNESS WALKER'S RECOMMENDATION TO ADJUST EMPLOYEE PENSION AND BENEFITS.

A. No.

Q. PLEASE EXPLAINS WHY.

A. Walker's historical approach to determine a going forward level of expense ignores the spirit of a fully projected future test year. Historical data should not be used when the amounts proposed have been developed using assumptions that are known and measurable. The Company's claim for employee pension and benefits contains two components, Retirement Benefits and Healthcare Benefits.

The calculation of retirement benefits is based on a percentage of each employee's salary as outlined in the Company's benefits guide. Included in the Company's claim is 3% non-elective contributions and a contribution match of 4% for non-elective retirement benefits. These assumptions can be found in "CUPA W Exhibit No. PB-2R-CONFIDENTIAL". Any adjustment that does not explicitly factor in these known assumptions should not be considered reasonable and is inconsistent with how the Company's incurs its retirement benefit expenses. Table 2 below show retirement costs as a percentage of salaries and

wages for CUPA and the cost centers that allocate salary and benefit cost to CUPA ratepayer. The table shows a stable retirement expense percentage to salaries and wages from 2019 through 2021. I have excluded 2018 costs from the analysis because retirement benefits were allocated to all subsidiaries from WSC based on Equivalent Residential Connection or "ERC". These are now being directly charged to each business unit based on headcount.

Table 2

Commmunity Utilities of Pennsylvania			
	FY2019	**FY2020**	**YTD 2021**
Salaries & Wages[1]	489,249	648,273	375,912
Retirement	24,740	33,202	22,849
Retirement % of Salary	5.06%	5.12%	6.08%
MidAtlantic			
	FY2019	**FY2020**	**YTD 2021**
Salaries & Wages[1]	147,592	128,857	165,026
Retirement	8,315	4,710	12,878
Retirement % of Salary	5.63%	3.65%	7.80%
Midwest/MidAtlantic Region			
	FY2019	**FY2020**	**YTD 2021**
Salaries & Wages[1]	1,069,770	1,189,471	612,758
Retirement	62,784	67,346	43,853
Retirement % of Salary	5.87%	5.66%	7.16%

1 Excludes Capitalized Time

The Company's claim for healthcare benefits is based on projected costs per employee. These costs are developed using an outside consultant Hays Company who uses industry data and the Company's historical care costs. Additional details developed by Hays Companies that were used to develop the healthcare forecast in "CUPA W Exhibit No. PB-3R-CONFIDENTIAL". Neither forecasted or historical healthcare costs have any correlation to salaries and wages therefore these costs should not be gauged as a percentage of salaries for a going forward levels of employee pension and benefits expense.

Rate Case Expense

Q. PLEASE EXPLAIN I&E WITNESS WALKER'S ADJUSTMENT TO RATE CASE EXPENSE?

A. I&E witness reduces the Company's FPFTY claim for rate case expense by $7,131. Walker recommends normalization of rate case expense as opposed to amortizing. With the normalization treatment Walker removes unamortized rate case expense in the O&M claim. Additionally Walker removes $118,312 deferred rate case expense from CUPA's rate base claim.

Q. HOW DO YOU RESPOND TO I&E WITNESS WALKER'S RECOMMENDATION TO NORMALIZE RATE CASE EXPENSE?

A. The Company agrees and will adopt Walker's recommendation to use normalization for ratemaking purposes. The Company also agrees to remove unamortized rate case expense from the development of the normalized level of rate case expense.

Q. DOES THE COIMPANY HAVE ANY ADJUSTMENT TO ITS CLAIM FOR RATE CASE EXPENSE.

A. Yes, the Company is recommending a normalization period of 3 years.

Q. PLEASE PROVIDE THE ADJUSTED CLAIM FOR RATE CASE EXPENSE.

A. CUPA Is proposing a claim of $39,437 for the FPFTY period. This amount reflects the removal of unamortized rate case expense along with the adjusted normalization period of 3 years.

Q. WHY IS IT APPROPRIATE FOR CUPA TO ADJUST THE PROPOSED NORMALIZATION PERIOD?

A. The proposed normalization periods does not allow for the Company the opportunity to recover the cost of rate case expense before its next rate case based on the historical frequency. The unrecovered costs from the previous case presented in the current case are costs the shareholder is forfeiting as a result of the normalization period outlined in the previous case. The shareholder should be allowed the opportunity to recovery of all prudent expenses despite the frequency of the need for rate relief. These expenses occur at frequencies that are known based on a historical filing cycles therefore they should not be deemed irregular.

Q. HOW DO YOU RESPOND TO I&E WITNESS WALKER'S RECOMMENDATION TO REMOVE DEFERRED RATE CASE EXPENSE FROM RATE BASE?

A. The Company did not included any deferred rate case expense in its rate base claim.[1] Therefore Walker's $118,312 adjustment should not be considered in the Company's final rate base claim. Please refer to "CUPA W Exhibit No. PB-1R" for the deferred charges detail included in the CUPA's claim.

Q PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ADJUSTMENT TO RATE CASE EXPENSE?

A. Sherwood also recommends normalization of rate case expense as opposed to amortizing. Sherwood accepts the original proposal to normalize rate case expense over 4 years.

[1] During the review of the parties direct testimony, CUPA became aware of an error in the direct testimony of David Clark, CUPA St. No. 3 at 20 which indicated that CUPA is proposing deferred additions to deferred rate case expense. This statement was in error and CUPA will correct the statement on Page 20 in an errata to CUPA St. No. 3.

Q. HOW DO YOU RESPOND TO OCA WITNESS SHERWOOD'S RECOMMENDATION TO NORMALIZE RATE CASE EXPENSE?

A. As stated above the Company agrees to normalize rate case expense for ratemaking purposes however CUPA is proposing a normalization period of 3 years.

Net Book Value of Penn Estates Meters

Q. PLEASE EXPLAIN I&E WITNESS WALKERS TO ADJUST RATE BASE FOR THE DEFERRED CHARGES RELATED TO THE NET BOOK VALUE OF PENN ESTATES METERS.

A. I&E Witness Walkers reduced the CUPA's $93,189 claim for deferred charges by $20,646 for the amortization of the net book value of retired Penn Estates meters. This recommendation begins the amortization of the deferred asset on January 1, of 2018.

Q. DO YOU AGREE WITH WALKERS'S RECOMMEDATION TO ADJUST THE COMPANY'S CLAIM RELATED TO THE NET BOOK VALUE OF PENN ESTATES METER?

A. The Company accepts this recommendation and will adjust its rate base claim to reflect accumulated amortization starting January 1, 2018.

Recovery Mechanism

Q. PURSUANT TO THE ORDER GRANTING THE JOINT PETITION FOR EXTENSION OF PROCEDURAL SCHEDULE ENTERED JULY 22, 2021, BY CHIEF ALJ CHARLES RAINEY, THE SUSPENSION PERIOD FOR RATES WAS EXTENDED FROM JANUARY 12, 2022 TO FEBRUARY 18, 2022. THE ORDER FURTHER ALLOWED CUPA TO RECOVER ANY RATE INCREASE GRANTED BACK TO THE ORIGINAL SUSPENSION DATE OF JANUARY 12, 2022, AND A

RECOVERY MECHANISM WOULD BE DETERMINED AT A LATER TIME. DO YOU HAVE ANY COMMENT ON A RECOVERY MECHANISM AT THIS TIME?

A. Yes, I am advised by Counsel that in other recent proceedings where the suspension period was extended, a recovery mechanism was proposed and ultimately settled on. In particular, in Pennsylvania American Water Company's 2020 base rate proceeding at Docket No. R-2020-3019369 et al. where the procedural schedule was similarly extended, the parties entered a settlement, which the Commission ultimately approved, that provided:

> **E. Effective Date**
>
> 72. The Joint Petitioners agree to the implementation of the Settlement Rates on January 28, 2021, when the suspension period will expire. Upon the entry of a Commission Order approving this Joint Petition, the Company will be permitted to file a tariff for water service, in the form attached hereto as Appendix A, and a tariff for wastewater service, in the form attached hereto as Appendix B, reflecting the agreed-to additional operating revenue to become effective in two installments on January 28, 2021 and January 1, 2022, respectively. The Company's proposed limitation of liability provisions, which are outlined in the direct and rebuttal testimony of PAWC witness Ashley Everette, have been reflected in the proposed tariffs for water service and wastewater service provided in Appendices A and B.
>
> 73. If Commission approval of this Settlement occurs after January 28, 2021, the Joint Petitioners agree that PAWC shall be entitled to recoup the revenue increase not billed from the effective date through the date of PUC approval of new rates in the manner set forth in the Commission's final Order in this proceeding. The revenue increases not billed from the effective date through the date of PUC approval of new rates will be recovered over a six-month period that shall be applied proportionately to all customer classes.

See Pennsylvania Pub. Util. Comm'n v. PAWC, Docket Nos. R-2020-3019369 et al., Opinion and Order at 26-27; 35-38 (Order entered February 25, 2021).

Q. WHAT DOES CUPA PROPOSE FOR THE RECOVERY MECHANISM FOR RATE RECOVERY BACK TO THE ORIGINAL SUSPENSION PERIOD?

A. Similar to the PAWC settlement, CUPA proposes that it be entitled to recoup the revenue increase not billed from the original effective date of January 12, 2022, through the date of any final PUC approval of new rates over a six-month recovery period where the difference in current rates and any approved rates shall be calculated and applied proportionately to all customer classes via a surcharge on each monthly bill during the six-month recovery period.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

CUPA W Exhibit No. PB-1R

Community Utilities of Pennsylvania Inc.

AMORTIZATION OF DEFERRED CHARGES (ACTUAL AND FORECASTED)

Future Test Year Ended December 31, 2022

w/p [u]

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
							12/31/20	12/31/20	12/31/20	2021	2021	12/31/2021	2022	2022	12/31/2022
Line #		Asset #	Description	Life Months	Start	End	*Def Charges*	*Accumulated Amortization*	NBV	Additions	Amortization	NBV	Additions	Amortization	NBV
1	***Def Chgs - Tank Maint and Repair***														
2	*Water*	1011554	DEF CHGS-TANK MAINT&REP	60	11/14/2018	11/14/2023	11,038	(4,784)	6,254	-	(2,208)	4,046	-	(2,208)	1,839
3	*Water*	1012242	TANK 1 AND 2 ROV	60	12/10/2019	12/10/2024	6,900	(1,497)	5,403	-	(1,380)	4,023	-	(1,380)	2,643
4	*Sewer*	1012384	DEF CHGS-TANK MAINT&REP	60	03/04/2020	3/4/2025	4,100	(684)	3,416	-	(820)	2,596	-	(820)	1,776
5	*Sewer*	1012494	DEF CHGS-TANK MAINT&REP	60	05/15/2020	5/15/2025	12,300	(1,641)	10,659	-	(2,460)	8,199	-	(2,460)	5,739
6	*Sewer*	1012762	TANKS, FILTER, SPHEROID, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	16,400	(273)	16,127	-	(3,280)	12,847	-	(3,280)	9,567
7	*Sewer*	1012764	TANKS, FILTER, SPHEROID, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	8,200	(137)	8,063	-	(1,640)	6,423	-	(1,640)	4,783
8	*Water*	1012766	TANKS, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	6,900	(115)	6,785	-	(1,380)	5,405	-	(1,380)	4,025
9	*Water*	1012767	TANKS, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	6,900	(115)	6,785	-	(1,380)	5,405	-	(1,380)	4,025
10	*Water*	1011415	WTR-PERMITS	120	10/16/2018	10/16/2028	5,107	(1,150)	3,957	-	(511)	3,446	-	(511)	2,936
11				**TOTALS**			77,845	(10,396)	67,448	-	(15,058)	52,390	-	(15,058)	37,332
12	***Def Chgs - Other Water and Sewer***														
13	*Water*	*1010637*	(JUNE) LAB TESTING	36	07/13/2017	7/13/2020	9,327	(9,327)	-	-	-	-	-	-	-
14	*Water*	*1012314*	DEF CHGS-OTHER WTR & SW	24	01/23/2020	1/23/2022	362	(181)	181	-	(181)	-	-	-	-
15	*Water*	*1012228*	DEF CHGS-OTHER WTR & SW	48	11/18/2019	11/18/2023	5,412	(1,579)	3,833	-	(1,353)	2,480	-	(1,353)	1,127
16	*Sewer*	*1011870*	DEF CHGS-OTHER WTR & SW	60	06/14/2019	6/14/2024	12,300	(3,902)	8,398	-	(2,460)	5,938	-	(2,460)	3,478
17	*Sewer*	*1012125*	DEF CHGS-OTHER WTR & SW	60	10/10/2019	10/10/2024	20,500	(5,133)	15,367	-	(4,100)	11,267	-	(4,100)	7,167
18	*Sewer*	*1012126*	DEF CHGS-OTHER WTR & SW	60	10/07/2019	10/7/2024	41,000	(10,267)	30,733	-	(8,200)	22,533	-	(8,200)	14,333
19	*Sewer*	*1012133*	DEF CHGS-OTHER WTR & SW	60	10/10/2019	10/10/2024	24,600	(6,160)	18,440	-	(4,920)	13,520	-	(4,920)	8,600
20	*Water*	*1012283*	DEF CHGS-OTHER WTR & SW	60	01/31/2020	1/31/2025	5,820	(1,164)	4,656	-	(1,164)	3,492	-	(1,164)	2,328
21	*Sewer*	*1012477*	DEF CHGS-OTHER WTR & SW	60	05/26/2020	5/26/2025	24,600	(3,282)	21,318	-	(4,920)	16,398	-	(4,920)	11,478
22	*Water*	*1012503*	METER READING - SENSUS SUPPORT	576	05/29/2020	5/29/2068	5,736	(80)	5,657	-	(120)	5,537	-	(120)	5,418
23				**TOTALS**			149,656	(41,074)	108,582	-	(27,417)	81,165	-	(27,236)	53,928
24	***Def Chgs - Multi Yr Testing***														
25	*Water*	*1005715*	PENN ESTATES TESTING	36	01/01/2012	1/1/2015	40,020	(40,020)	-	-	-	-	-	-	-
26	*Water*	*1012841*	SUPP 12967 INV 175334	36	08/11/2020	8/11/2023	48	(7)	42	-	(16)	26	-	(16)	9
27	*Water*	*1012840*	SUPP 12967 INV 176715	36	10/15/2020	10/15/2023	0	(0)	0	-	(0)	0	-	(0)	0
28	*Water*	*1012842*	SUPP 12967 INV 176715	36	10/15/2020	10/15/2023	66	(5)	60	-	(22)	38	-	(22)	16
				TOTALS			40,134	(40,032)	102	-	(38)	64	-	(38)	26
29	***Def Chgs - Other***														
30	*Water*	1010889_G	PENN ESTATES METER NBV	120	1/31/2018	12/31/2027	86,029	(17,206)	68,823	-	(8,603)	60,221	-	(8,603)	51,618
31				**TOTALS**			86,029	(17,206)	68,823	-	(8,603)	60,221	-	(8,603)	51,618
32	***Def Chgs - Relocation***														
33	*Water*	*1012877*	DEFERRED CHARGE RELOCATION	24	08/15/2020	8/15/2022	193	(40)	153	-	(97)	56	-	(56)	0
34				**TOTALS**			193	(40)	153	-	(97)	56	-	(56)	0
35	*Proforma Deferred Assets*														
36	*Water*	319-2M	Multi-Year Testing	**36**	9/30/2021	12/31/2023	-	-	-	-	-	-	-	-	-
34				**TOTALS**			-	-	-	-	-	-	-	-	-
35			**Community Utilities of Pennsylvania Inc.**	**TOTALS**			353,858		245,109	-	(51,213)	193,896	-	(50,992)	142,904
							12/31/20	12/31/20	12/31/20	2021	2021	12/31/2021	2022	2022	12/31/2022
36							*Def Charges*	*Accumulated Amortization*	NBV	Additions	Amortization	NBV	Additions	Amortization	NBV
37	**Water**		**Community Utilities of Pennsylvania Inc.**	**TOTALS**			189,858		112,588	-	(18,413)	94,175	-	(18,192)	75,983
38	**Sewer**		**Community Utilities of Pennsylvania Inc.**	**TOTALS**			164,000		132,521	-	(32,800)	99,721	-	(32,800)	66,921

CUPA W Exhibit No. PB-2R

CONFIDENTIAL

[REDACTED]

CUPA W Exhibit No. PB-3R

CONFIDENTIAL

[REDACTED]

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

REBUTTAL TESTIMONY

OF

DAVID CLARK

EXPENSES AND RATE BASE

WATER DIVISION

SPONSORING CUPA W EXHIBIT NO. DMC-1R AND DMC-2R

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Introduction

Q. ARE YOU THE SAME DAVID CLARK THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING ON JUNE 11, 2021 ON BEHALF OF COMMUNITY UTILITIES OF PENNSYLVANIA ("CUPA") OR ("THE COMPANY") WATER DIVISION?

A. Yes.

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF PENNSYLVANIA PUBLIC UTILITY COMMISSION'S BUREAU OF INVESTIGATION AND ENFORCEMENT ("I&E") AND THE OFFICE OF CONSUMER ADVOCATE ("OCA")?

A. Yes, I have.

Q. DO YOU HAVE ANY MATTERS THAT YOU WOULD LIKE TO ADDRESS IN REBUTTAL?

A. Yes. There are several items discussed in the testimony of OCA and I&E to which I would like to respond.

Community Utilities of Pennsylvania Rebuttal Position

Q. WHAT IS CUPA'S REBUTTAL REVENUE REQUIREMENT?

A. CUPA's total revenue requirement is $2,825,663 which is an increase of $753,939 to CUPA's present rate revenues of $2,071,724. This amount is also $3,572 less than the Company's filed incremental revenue increase. The adjusted incremental revenue decrease was calculated using O&M, taxes, and rate base adjustments included in this testimony. Please refer to the following table for a calculation of the Company's revenue requirement.

Community Utilities of Pennsylvania Inc.
FPFTY Ended December 31, 2022
Water Division
Statement of Operating Income Setting Forth the Operating Revenues
FPFTY Ended December 31, 2022

Water Operations

	Original Submission Ended 12/31/2022	Adjustments Ended 12/31/2022	Rebuttal Submissior Ended 12/31/2022
Operating Revenue			
Gross Operating Revenue	$ 2,823,034	$ 2,628	$ 2,825,663
Allowance for Uncollectible Accounts	(20,466)	(2)	(20,469)
Net Operating Revenue	2,802,568	2,626	2,805,194
		-	-
Operating Expenses		-	-
		-	-
Operating Expenses	$ 1,547,459	$ (356)	$ 1,547,103
Depreciation	$ 375,543	$ -	$ 375,543
Amortization of PAA	$ (36,069)	$ -	$ (36,069)
Taxes Other than Income	$ 79,294	$ (39)	$ 79,255
Amortization of CIAC	$ (30,502)	$ -	$ (30,502)
		$ -	$ -
Income Taxes		$ -	$ -
Federal Income Tax	$ 118,401	$ 657	$ 119,058
State Income Tax	$ 62,577	$ 347	$ 62,924
		$ -	$ -
Total Operating Expenses	$ 2,116,703	$ 609	$ 2,117,311
		$ -	$ -
Net Operating Income	$ 685,866	$ 2,017	$ 687,883
		$ -	$ -
Non-Operating Income & Expenses		$ -	$ -
Interest Expense	$ 240,451	$ (454)	$ 239,997
Other Income	-	-	-
		-	-
Total Non-Operating Expenses	$ 240,451	$ (454)	$ 239,997
		-	-
Net Income (Loss)	$ 445,414	$ 2,471	$ 447,885
Rate Base	$ 9,093,154		$ 9,075,999
Rate of Return	7.54%		7.58%

Q. PLEASE PROVIDE A SUMMARY OF CUPA'S ADJUSTMENTS INCLUDED IN THE COMPANY'S REBUTTAL POSITION.

A. Please see the following table for a summary of CUPA's adjustments. These adjustments will be discussed in detail throughout this testimony as well as the testimonies of Perry Brown and Steven Lubertozzi. Please refer to CUPA W Exhibit No. DMC-1R for the operating statement and rate base statement supporting the Company's claim.

WATER				
Rate Base Adjustment	**Original Proposed**	**I&E Adjustment**	**OCA Adjustment**	**Company Rebuttal Adjustment**
Amortization of Retired Meters - Water	68,823	(20,646)	-	(20,646)
Rate Case Expense - Water	-	(118,312)	-	-
Working Capital - Water	200,448	(19,901)	(10,440)	(49)
O&M Adjustments				
Rate Case Expense - Water	36,709	(7,131)		2,728
Purchased Power Expense - Water	106,110	(38,283)		0
Chemical Expense - Water	113,899	(47,735)	(42,352)	-
Materials, Supplies, and Other Maint - Water	116,943	(18,192)		-
Engineering Expense - Water	9,953		(3,057)	(1,795)
Testing, Meter Reading and Misc Expense - Water	43,343		6,495	-
Purchased Water Expense - Water	217,663	(15,293)		-
Salaries and Wages - Water	396,201		(54,304)	(1,205)
Employee Pension and Benefits - Water	111,990	(32,576)	(6,359)	(84)
Payroll Taxes - Water	32,487		632	(17)
Uncollectible Accounts - Water	(20,466)		1,097	(2)
Forfeited Discounts - Water	6,137			2,303

Rate Base Adjustments

Q. DO YOU AGREE WITH WITNESS I&E SAKAYA'S RECOMMENDATION THAT THE COMPANY PROVIDE ANNUAL UPDATES TO CUPA-W SUPPORTING DATA, SECTION 1, PAGE 17 TO PROVIDE ACTUAL ADDITIONS AND RETIREMENTS FOR THE FTY AND FPFTY BY APRIL 1, 2022 AND APRIL 1, 2023?

A. Yes, the Company is willing to provide the requested updates.

Cash Working Capital

Q. WHAT IS CUPA'S ADJUSTED CLAIM FOR CASH WORKING CAPITAL ("CWC")?

A. The Company's claim should reflect $200,399 to include all operating and maintenance expense adjustments included in the Company's rebuttal position. The following table shows the calculation of CWC included in CUPA's rebuttal position.

12/31/22 Forecast			
Maintenance Expenses		$	879,190
General Expenses			667,913
Taxes Other Than Income			79,255
Reduction of Real Estates Taxes			(23,167)
Total		$	1,603,190
Working Capital	45/360	$	200,399

Engineering Expense

Q. PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ADJUSTMENT TO ENGINEERING EXPENSE.

A. OCA witness Sherwood reduced the Company's claim of $9,953 for the FPFTY by $3,057. OCA St. No. 1 (water) at 11-12. The recommended allowance of $6,896 for engineering expense was calculated by applying a 5-year normalization calculation to the expenses perceived not to be annual in nature and a 3-year normalization to annual expenses.

Q. DO YOU AGREE WITH SHERWOOD'S RECOMMENDATION TO NORMALIZE ENGINEERING EXPENSE?

A. No, I do not.

Q. PLEASE EXPLAIN WHY.

A. The nature of CUPA's claim is based on projected expenses. Witness Sherwood's calculations were made using historical amounts that are not representative of present and forward-looking amounts. In addition, using this 3-year and 5-year historical averages does not accurately account for the mid-year 2019 acquisition of Tamiment. This type of backward-looking adjustment will not give CUPA a fair opportunity to recover costs in the year rates will be in effect and future forecasted costs under the fully projected future test

year framework. These are costs which are prudent and reasonable to sustain CUPA's operations.

Q. WHAT IS CUPA'S CLAIM FOR ENGINEERING EXPENSE FOR THE FPFTY?

A. The Company does not agree with Sherwood's averaging calculation since it does not accurately account for the Tamiment acquisition. However, and without admission, the Company will not oppose an adjustment that uses a 2-year average of 2019 and 2020 for annual expenses in order to account for the acquisition. This calculation would net an adjustment reduction to engineering expense for the FPFTY of $1,795. This was calculated by averaging 2019 and 2020 annual expenses (($10,176+$12,844)/2) = $11,510 and then adding the 5-year average of $6,306 as calculated by witness Sherwood for non-annual expenses. The resulting $17,816 was then multiplied by the Water ERC allocation weight of 45.79%, which totals $8,158, this amount is then netted against the original claim of $9,953 producing the adjustment of $1,795.

<u>Purchased Power Expense</u>

Q. PLEASE EXPLAIN I&E WITNESS WALKER'S ALLOWANCE FOR PURCHASED POWER EXPENSE FOR FPFTY ENDING DECEMBER 31, 2022.

A. I&E witness Walker reduced the Company's claim of $106,110 for the FPFTY by $30,828 I&E St. No. 1 (water) at 7-10. Walker's recommended allowance of $75,282 for purchased power expense was calculated using normalization of three historical periods (2018-2020). *Id.* As previously stated, this approach looks backward instead of looking forward which is the intent of the best ratemaking and the FPFTY approved by the

General Assembly. Walker's reasoning for this reduction was based on backward view of the Company's costs in the past and unrepresentative years. *Id.*

Q. DO YOU AGREE WITH WITNESS WALKER'S RECOMMENDED ALLOWANCE FOR PURCHASED POWER EXPENSE?

A. No.

Q. PLEASE EXPLAIN YOUR RESPONSE.

A. Walker's historical average calculation is similar in approach to the Company's calculation methodology. However, the same calculation methodology should be applied to the Wastewater Purchased Power Expense as well. The effect of this 3-year normalization would lead to an increase to the expense in the Wastewater service and a decrease in Water service. This is due to allocation differences between Water and Wastewater service due to a change in accounting software that has led to a different General Ledger account structure than in previous years. This change has caused a consolidation of purchased power expense General Ledger accounts which caused differences in the allocation of expenses between water and wastewater for historical years and explains why the FPFTY is showing an increase in Water purchased power and a decrease in Wastewater purchased power. Using Walker's same calculation logic for both Water and Wastewater is necessary in order to eliminate any expense fluctuations that are related to the allocation differences between Water and Wastewater services. The increase to Wastewater purchased power expense using the proposed calculation method would be $45,862, which is a combined net effect to customers of an increase of $15,034.

Q. PLEASE DETAIL THE WASTEWATER ADJUSTMENT AMOUNT.

A. The adjustment amount is an increase to Wastewater Purchased Power Expense of $45,862. This is calculated by using the 2018 and 2019 historical annual totals, $157,276 and $169,214, respectively, which were then divided by the corresponding wastewater division ERC (3,143 and 3,721). The same calculation was performed for the HTY purchased power expense ($142,271), provided in the Company's filing, and corresponding ERC (3,897). The resulting historical expense per ERC values were then averaged (($50.04 + $45.48 + $36.51) ÷ 3) and multiplied by the current ERC count yielding an amount of $171,499 ($44.01 x 3,897). The difference of the $171,499 and the original submission of $125,637 leads to the adjustment amount of $45,862.

Q. WHAT IS CUPA CLAIM FOR PURCHASED POWER EXPENSE FOR THE FPFTY?

A. Due to the factors mentioned above, the Company is proposing to stay with its original claimed submission for purchased power expense for Water and Wastewater.

Chemical Expense

Q. PLEASE EXPLAIN I&E WITNESS WALKER'S ALLOWANCE FOR CHEMICAL EXPENSE FOR FPFTY ENDING DECEMBER 31, 2022.

A. I&E witness Walker reduced the Company's claim of $113,899 for the FPFTY by $39,733. I&E St. No. 1 (water) at 11-14. Walker's recommended allowance of $74,166 for chemical expense was calculated using normalization of three historical periods. *Id.* As previously stated, this approach looks backward instead of looking forward which is the intent of the best ratemaking and the FPFTY approved by the General Assembly.

Walker's reasoning for this reduction was based on backward view of the Company's costs in the past and unrepresentative years. *Id.*

Q. DO YOU AGREE WITH WITNESS WALKER'S RECOMMENDED ALLOWANCE FOR CHEMICAL EXPENSE?

A. No.

Q. PLEASE EXPLAIN WHY.

A. I&E witness Walker incorrectly referenced the Company's response for purchased power fluctuations as the basis for using a three-year average per ERC for the FPFTY chemical expense. CUPA has maintained its position that unit demand for each chemical is the driver for the Company's claim, and that normalization of historical data is not consistent with the purpose of a fully projected future test year. Included in response to I&E-RE-33 Part A was the development of CUPA's forecast by unit demand for each chemical type and unit cost for each chemical. CUPA's increased chemical costs for the FTY and FPFTY account for all known and measurable changes, including but not limited to changes in supplier costs, chemical delivery costs, and forecasted demand requirements for the Tamiment system. The goal of a FPFTY should be to accurately predict as well as possible, using operational or other drivers, what reasonable costs the utility will incur in the rate year and collect those costs from ratepayers in the rate year.

Q. PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ALLOWANCE FOR CHEMICALS EXPENSE FOR FPFTY ENDING DECEMBER 31, 2022.

A. Sherwood reduced the Company's claim of $113,899 for the FPFTY by $42,352. OCA St. No. 1 (water) at 10-11. Like I&E Witness Walker, the recommended allowance of

$71,547 for chemicals was calculated using a normalization of three historical periods. *Id.* Sherwood's reasoning for the chemical reduction was based on historical fluctuations in chemicals expense and was calculated using incorrect HTY totals *Id*.

Q. DO YOU AGREE WITH SHERWOOD'S RECOMMENDED ALLOWANCE FOR CHEMICAL EXPENSE?

A. No. I do not.

Q. PLEASE EXPLAIN WHY.

A. The Company does not believe normalization of historical data is consistent with the purpose of a fully projected future test year. Further, Sherwood disregards any increase that could be associated to cost inflation from historical periods. Finally, the provided calculation of the 3-year average is incorrect as the 2020 (HTY) expense of $168,183 as provided by the Company in Schedule 1-12 and the response to Data Request "OCA-Sherwood Set II-8 Chemical Expense HTY" was not used for the calculation. Instead, an incorrect amount of $50,660 was pulled from a response to a Data Request that was related to forecasted 2021 and 2022 expense that did not include the full 2020 year's expense. Using the correct HTY expense, invalidates her position of ignoring the Tamiment acquisition in the calculations due to the incorrect statement of "despite the addition of Tamiment, the purchase of chemicals in the HTY (2020) was lower than in 2019".

Q. WHAT IS CUPA'S PROPOSED CLAIM FOR CHEMICALS EXPENSE?

A. It remains the original filed claim of $113,899 for the FPFTY chemical expense.

Materials, Supplies, and Other Maintenance Expense

Q. **PLEASE EXPLAIN I&E WITNESS WALKER'S RECOMMENDATIONS FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE FOR THE FPFTY ENDING DECEMBER 31, 2022.**

A. I&E witness Walker reduced the Company's claim of $116,943 for the FPFTY by $18,192. I&E St. No. 1 (water) at 14-15. The recommended allowance of $98,751 for materials, supplies and other maintenance expense was calculated by removing deferred maintenance expense. *Id.* Walker claims that routine operating expenses are not appropriately subjected to deferral treatment, representing an out of period expense and that the Company should not be granted permission to recover prior period routine operating expenses. *Id.*

Q. DO YOU AGREE WITH WALKER'S RECOMMENDATION TO REMOVE DEFERRED MAINTENANCE EXPENSES FROM MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSES?

A. No, I do not.

Q. PLEASE EXPLAIN WHY.

A. Deferred maintenance expenses are known and measurable expenses required to provide service to customers. Although these expenses do not recur annually, their benefit is recognized over multiple years; and therefore, the related expense is most accurately recognized equally over the length of their life. This is the method that these expenses were calculated for this rate case, as well as how they have been calculated in previous cases. The disallowance of these expenses does not allow the utility the opportunity to recover the costs of prudent expenses often required by local and federal agencies.

Testing, Meter Reading, and Miscellaneous Expense

Q. PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ALLOWANCE FOR TESTING, METER READING, AND MISCELLANEOUS EXPENSE FOR FPFTY ENDING DECEMBER 31, 2022.

A. OCA witness Sherwood increased the Company's claim of $43,343 for the FPFTY by $6,495. OCA St. No. 1 (water) at 12-13. Sherwood's recommended allowance of $49,838 for testing, meter reading, and miscellaneous expense was calculated using normalization of three historical periods. *Id.* As previously stated, this approach looks backward instead of looking forward which is the intent of the best ratemaking and the FPFTY approved by the General Assembly. Sherwood's reasoning for this adjustment was based on backward view of the Company's costs in the past and unrepresentative years. *Id.* In addition, the 3-year historical normalization calculation is not accurate as it does not account for or make any adjustment for the periods prior to the Tamiment acquisition and is therefore an inaccurate portrayal of future expense.

Q. PLEASE EXPLAIN WHY SHERWOOD'S ADJUSTMENT IS CAUSING AN INCREASE TO EXPENSE AND ADDRESS THE EXAMPLE RELATED TO SEWER TESTING THAT WAS USED AS JUSTIFICATION FOR NORMALIZATION.

A. The effect of a 3-year normalization is causing an increase to the expense in the Water service and a decrease in Wastewater service. This is due to allocation differences between Water and Wastewater service due to a change in accounting software that has led to a different General Ledger account structure than in previous years. This change has caused a consolidation of certain testing expense General Ledger accounts which

caused differences in the allocation of expenses between water and wastewater for historical years and explains why the FPFTY is showing an increase in sewer testing and decrease in water testing. Additionally, these explanations were specifically addressed in the Company's response to Wastewater Data Request OCA-Set III -10.

Q. DOES THE COMPANY AGREE WITH WITNESS SHERWOOD'S RECOMMENDED ADJUSTMENT?

A. No. As previously stated, this is a backward-looking approach, which will not allow the utility to recover its costs and is inconsistent with General Assembly's future tests year concept. Sherwood's reasoning for the adjustment was based on backward view of the Company's costs in the past and unrepresentative years. *Id.* In addition, the 3-year historical normalization calculation is not accurate as it does not account for or make any adjustment for the periods prior to the Tamiment acquisition and is therefore an inaccurate portrayal of future expense.

Additional Sponsored Exhibits

Q. PLEASE EXPLAIN ANY ADDITIONAL EXHIBITS THAT ARE BEING SPONSORED.

A. In support of the Company's position related to the consolidation of rates for the Tamiment system as discussed in the testimony of Andrew Dickson and for comparison purposes, please refer to CUPA W Exhibit No. DMC-2R which is a Tamiment Water standalone operating statement and revenue requirement.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

CUPA W Exhibit No. DMC-1R

Community Utilities of Pennsylvania Inc.
Water Operations
Statement of Net Operating Income Under the Existing and Proposed Rates for the Base Year Ended
December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and the FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1a

Water Operations	Schedule Number	Per Books Base Year Ended 12/31/2020	Change	Future Test Year Ended 12/31/2021	Change	Future Test Year Ended 12/31/2022	Change	Proposed FPFTY Ended 12/31/2022
Operating Revenue								
Gross Operating Revenue	(b)(2)	$ 2,043,427	$ 44,282	$ 2,087,709	$ (15,964)	$ 2,071,745	$ 753,939	$ 2,825,684
Allowance for Uncollectible Accounts	Sup. Sch. No.3	(70,671)	55,688	(14,984)	-	(14,984)	(5,485)	(20,469)
Net Operating Revenue		1,972,756	99,970	2,072,726	(15,964)	2,056,761	748,454	2,805,215
Operating Expenses								
Operating Expenses	(c)(1) - Sheet No. 1b	$ 1,619,437	$ (101,858)	$ 1,517,580	$ 29,523	$ 1,547,103	$ -	$ 1,547,103
Depreciation	Sup. Sch. No. 4	238,391	98,197	336,588	38,955	375,543	-	375,543
Amortization of CIAC	Sup. Sch. No. 4	(37,633)	7,130	(30,502)	-	(30,502)	-	(30,502)
Amortization of PAA	Sup. Sch. No. 4	(43,334)	7,265	(36,069)	-	(36,069)	-	(36,069)
Taxes Other than Income	Sup. Sch. No. 5	45,595	20,323	65,918	8,345	74,263	4,991	79,255
Income Taxes								
Federal Income Tax	Sup. Sch. No. 6	$ 7,419	$ (6,566)	$ 853	$ (22,324)	$ (21,471)	$ 140,529	$ 119,058
State Income Tax	Sup. Sch. No. 6	665	(214)	$ 451	(11,799)	(11,348)	74,271	62,924
Total Operating Expenses		1,830,540	24,279	1,854,819	42,701	1,897,520	219,792	2,117,311
Net Operating Income		$ 142,215	$ 75,691	$ 217,907	$ (58,665)	$ 159,242	$ 528,662	$ 687,904

Community Utilities of Pennsylvania Inc.
Water Operations
Statement of the Calculation of the Rate of Return Under the Present and Proposed Rates for the Base Year Ended December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 2

Water Operations	Supporting Schedule No.	Pro-forma Present 12/31/2020		Future Test Year 12/31/2021		Future Test Year 12/31/2022		Proposed FPFTY 12/31/2022	
Utility Plant In Service	(c)(3)	$ 13,579,565		$ 13,579,565		$ 13,579,565		$ 13,579,565	
Less:									
Accumulated Depreciation	(c)(4)	(4,236,721)		(4,573,309)		(4,948,852)		(4,948,852)	
Net Plant In Service		9,342,844		9,006,256		8,630,713		8,630,713	
Less:									
Contributions in Aid of Construction (Net)		(1,296,000)		(1,265,498)		(1,234,996)		(1,234,996)	
Net Plant Acquisition Adjustment		(655,405)		(755,960)		(719,891)		(719,891)	
Customer Deposits		(929)		(1,442)		(1,442)		(1,442)	
Accumulated Deferred Income Taxes		(429,861)		(439,887)		(454,825)		(454,825)	
Add:									
Proforma Level of Plant		-		1,286,300		2,580,058		2,580,058	
Deferred Charges		156,670		94,175		75,983		75,983	
Cash Working Capital	11	205,695		195,273		200,399		200,399	
Total Rate Base		$ 7,323,014		$ 8,119,218		$ 9,075,999		$ 9,075,999	
Net Operating Income	(c)(1) Sheet 1a	142,215		217,907		159,242		687,904	
Percent Pro-forma Return		1.94%	[1]	2.68%	[1]	1.75%	[1]	7.58%	[1]

[1] Net Operating Income over Total Rate Base.

CUPA W Exhibit No. DMC-2R

Community Utilities of Pennsylvania Inc.
Water Operations
Future Test Year Ended December 31, 2022

Line No.	A	B 12/31/2020 Per Books	C Change	D 12/31/2021 Forecast	E Change	F 12/31/2022 Forecast	G 12/31/2022 Future Test Year	H Proposed Increase	I Pro Forma Proposed
1	Operating Revenues								
2	Service Revenues - Water	$ 284,173	$ (58,633) [a]	$ 225,540	(1,237) [a]	224,303	$ 224,303	414,693 [m]	$ $ 638,995
3	Service Revenues - Sewer	-	-	-	-	-	-	-	-
4	Purchased Water Surcharge	-	-	-	-	-	-	-	-
5	Purchased Sewer Surcharge	-		-	-	-	-	-	-
6	Miscellaneous Revenues	2,779	(1,239) [k]	1,540	-	1,540	1,540	-	1,540
7	Uncollectible Accounts	(32,025)	30,393 [b]	(1,632)	- [d]	(1,632)	(1,632)	(3,017) [b]	(5,109)
8									
9	Total Operating Revenues	$ 254,927	$ (29,479)	$ 225,448	$ (1,237)	$ 224,211	$ 224,211	$ 322,067	$ 609,115
10									
11	Maintenance Expenses								
12	Salaries and Wages	$ 71,312	$ (27,469)	$ 43,842	$ 2,168	$ 46,010	$ 46,010	$ -	$ 46,010
13	Purchased Power	35,015	(4,402)	30,613	611	31,224	31,224	-	31,224
14	Purchased Water	-	-	-	-	-	-	-	-
15	Maintenance and Repair	67,470	(48,402)	19,068	(1,065) [l]	18,003	18,003	-	18,003
16	Maintenance Testing	14,149	(8,803)	5,346	(379)	4,967	4,967	-	4,967
17	Meter Reading	-	-	-	2,500	2,500	2,500	-	2,500
18	Chemicals	18,698	3,677	22,374	-	22,374	22,374	-	22,374
19	Transportation	4,124	(291)	3,833	(18)	3,815	3,815	-	3,815
20	Operating Exp. Cap time Charged to Plant	(2,655)	(13,277)	(15,932)	9,849	(6,084)	(6,084)	-	(6,084)
21	Outside Services - Other	17,755	(8,647)	9,108	(1,828)	7,280	7,280	-	7,280
22									
23	Total	$ 225,867	$ (107,615) [c]	$ 118,252	$ 11,839 [d]	$ 130,091	$ 130,091	$ -	$ 130,091
24									
25	General Expenses								
26	Salaries and Wages	$ 7,401	$ 13,237 [k]	$ 20,638	$ 787 [k]	$ 21,425	$ 21,425	$ -	$ 21,425
27	Office Supplies & Other Office Exp.	3,848	249	4,097	35	4,132	4,132	-	4,132
28	Regulatory Commission Exp.	4,448	1,618	6,067	- [e]	6,067	6,067	-	6,067
29	Pension & Other Benefits	13,152	3,080	16,232	1,110	17,342	17,342	-	17,342
30	Rent	433	(325)	108	(108)	-	-	-	-
31	Insurance	5,580	2,090	7,670	933	8,602	8,602	-	8,602
32	Office Utilities	10,147	(3,573)	6,574	271	6,845	6,845	-	6,845
33	Miscellaneous	1,690	(44)	1,646	358	2,004	2,004	-	2,004
34	Corporate Allocation	58,998	(14,866)	44,132	1,646 [g]	45,778	45,778	-	45,778
35									
36	Total	$ 105,698	$ 1,466 [c]	$ 107,164	$ 5,031 [d]	$ 112,195	$ 112,195	$ -	$ 112,195
37									
38	Depreciation	$ 45,087	$ (16,038) [f]	$ 29,049	$ 357 [f]	$ 29,406	$ 29,406	$ -	$ 29,406
39	Amortization of PAA	-	$ -	-	-	-	-	-	-
40	Taxes Other Than Income	21,375	4,736 [c]	26,111	32,239 [d]	58,759	58,759	2,148	60,907
41	Income Taxes - Federal	-	(11,054) [h]	(11,054)	(11,571) [h]	(22,625)	(22,625) [h]	60,471 [h]	37,846
42	Income Taxes - State	-	(5,842) [h]	(5,842)	(6,115) [h]	(11,958)	(11,958) [h]	31,960 [h]	20,002
43	Amortization of ITC	-	-	-	-	-	-	-	-
44	Amortization of CIAC	-	- [f]	-	- [f]	-	-	-	-
45									
46	Total	$ 66,462	$ (27,790)	$ 38,672	$ 14,910	$ 53,583	$ 53,583	$ 94,579	$ 148,162
47									
48	Total Operating Expenses	$ 398,027	$ (133,939)	$ 264,088	$ 31,780	$ 295,869	$ 295,869	$ 94,579	$ 390,448
49									
50	Net Operating Income	$ (143,100)	$ 103,999	$ (39,100)	$ (33,017)	$ (72,118)	$ (72,118)	$ 227,488	$ 218,667
51									
52	Other Income	$ 7,051	$ -	$ -	$ -	$ -	$ -	$ -	$ -
53	Interest During Construction	(19,717)	19,717 [i]	-	-	-	-	-	-
54	Interest on Debt	57,296	8,825 [j]	66,122	10,171 [j]	76,292	76,292	-	76,292
55									
56	Net Income	$ (187,730)	$ 75,457	$ (105,222)	$ (43,188)	$ (148,410)	$ (148,410)	$ 227,488	$ 142,375

CUPA W STATEMENT NO. 4-R
August 27, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

REBUTTAL TESTIMONY

OF

ANDREW DICKSON

WATER RATE DESIGN

SPONSORING CUPAW REBUTTAL EXHIBIT NOS. AWD-1R THROUGH AWD-8R

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025206

Rebuttal Testimony of Andrew Dickson

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.**

A: My name is Andrew Dickson. I am a Senior Financial Analyst for Corix Regulated Utilities (US) Inc. ("CRUI"), formerly known as Utilities, Inc.[1] which changed its name to CRUI and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of UI. My business address is 500 W Monroe Street, Suite 3600, Chicago, IL 60661.

Q: **ARE YOU THE SAME ANDREW DICKSON WHO SPONSORED DIRECT TESTIMONY IN THIS PROCEEDING?**

A: Yes.

Q: **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A: The purpose of my testimony is to respond to certain issues discussed in the direct testimony of the Commission's Bureau of Investigation (I&E) witness Mr. Esyan Sakaya (I&E Statement No. 3). I also respond to certain issues raised in the direct testimony of Office of Consumer Advocate (OCA) witness Mr. Jerome Mierzwa (OCA Statement No. 3) and Office of Small Business Advocate (OSBA) witness Mr. Brian Kalcic (OSBA

[1] Utilities, Inc. changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

Statement No. 1). I will address the proposed consolidation of rates for Tamiment and the reasonableness of CUPA's proposed rates and rate design.

Q: **ARE THERE ANY ATTACHMENTS TO YOUR REBUTTAL TESTIMONY?**

A: Yes. Please refer to:

CUPA W Rebuttal Exhibit AWD-1R – Water Rate Design

CUPA W Rebuttal Exhibit AWD-2R – CUPA data request to OCA Set 1 No. 3

CUPA W Rebuttal Exhibit AWD-3R – CUPA data request to OCA Set 1 No. 4

CUPA W Rebuttal Exhibit AWD-4R – CUPA data request to OCA Set 1 No. 5

CUPA W Rebuttal Exhibit AWD-5R – CUPA data request to OCA Set 1 No. 6

CUPA W Rebuttal Exhibit AWD-6R – CUPA data request to OCA Set 1 No. 7

CUPA W Rebuttal Exhibit AWD-7R – CUPA data request to OCA Set 1 No. 8

CUPA W Rebuttal Exhibit AWD-8R – Forecasted Billing Units

Q: **PLEASE DESCRIBE THE CONTENTS OF CUPA W REBUTTAL EXHIBIT AWD-1R THROUGH AWD-8R.**

A: CUPA W Rebuttal Exhibit AWD-1R provides an update to CUPA W Exhibit AWD-1, which runs through CUPA's proposed water rate design. This exhibit shows updated rate

design including the effect of changing CUPA's hydrant charge for Section 1328 of the Public Utility Code.

CUPA W Rebuttal Exhibits AWD-2R through AWD-7R contain various responses from the OCA to CUPA's first set of data requests, generally clarifying the contents of Mr. Mierzwa's testimony.

CUPA W Rebuttal Exhibit AWD-8R details an improved billing unit and usage forecast for CUPA for 2022, which CUPA is not proposing to employ in this case due to the resulting rates applying greater pressure on CUPA customers.

CONSOLIDATION OF RATES FOR TAMIMENT

Q: **DO ANY WITNESSES ADDRESS THE CONSOLIDATION OF RATES FOR TAMIMENT AND CUPA?**

A: Yes. OCA witness Mr. Jerome Mierzwa recommends a partial movement to consolidation through a 70% movement of Tamiment's volumetric charge towards the fully consolidated volumetric charge and a 1.5 times the system average increase for Tamiment availability customers (OCA Statement No. 3 at 4). Mr. Mierzwa states, "[t]o avoid rate shock for the Tamiment water system customers, I recommend moving their rates toward the rates for the consolidated system rather than making them equal to the rates for the other systems as CUPA proposed" (OCA Statement No. 3 at 5).

OSBA's witness Mr. Brian Kalcic agrees that consolidation of rates for Tamiment and CUPA is an appropriate rate design goal, but ultimately concludes that full

consolidation at this time is not an appropriate outcome due to the level of change that Tamiment customers would experience under CUPA's proposed rates.

I&E witness Mr. Esyan Sakaya does not directly address consolidation of rates, but does not dispute the consolidation of rates and further states "[t]he corresponding Tamiment rates should match the rates in the Consolidated system as part of the scale back" in the context of modifications to CUPA's revenue requirement (I&E Statement No. 3 at 26). This is a tacit agreement to consolidate rates across all of CUPA's water systems, including Tamiment.

Q: **HOW DO YOU RESPOND TO MR. KALCIC'S POSITION THAT CONSOLIDATION OF RATES LEADS TO TOO STEEP AN INCREASE FOR TAMIMENT CUSTOMERS?**

A: CUPA disagrees with Mr. Kalcic and stands by its proposal to consolidate Tamiment with the rest of CUPA. Tamiment has not experienced a rate change for over 10 years, according to information we have received from the previous owner and the Commission's records. As such, significant investments have been and continue to be made to provide safe and reasonable service, and changes in operating costs over such a long period of time are normal. If Tamiment were its own stand-alone system with its own tariff, it's water rates would need to increase by over 185% (CUPA W Exhibit DC-2R). It is thus clear that

Tamiment customers will benefit immediately from consolidation with the rest of CUPA by providing a different base across which to share costs for necessary investments.

Q: **HOW DO YOU RESPOND TO MR. KALCIC'S AND MR. MIERZWA'S RECOMMENDATIONS FOR PARTIAL CONSOLIDATION OF TAMIMENT'S RATES?**

A: CUPA disagrees with these recommendations. Partial consolidation leaves CUPA's other customers subsidizing Tamiment customers. Tamiment customers have experienced a long period without rate changes – CUPA's proposed rates bring them up to date with where rates should be and bestows the benefits of consolidation, discussed above, on Tamiment customers. Mr. Kalcic's proposal to halfway consolidate Tamiment's volumetric charge is not supported by commentary surrounding when full consolidation will be achieved; if moving 50% of the way in this case, one might assume that the suggestion is to fully consolidate in CUPA's next case, but Mr. Kalcic states "[f]urther consolidation of Tamiment system rates should be addressed in CUPA's next rate case" (OSBA Statement No. 1 at 12). Mr. Kalcic appears not to address the shortfall in revenue that partial consolidation the way he has proposed creates, which is another cause for CUPA to be unable to adopt Mr. Kalcic's recommended rate design alterations.

Mr. Mierzwa similarly points to the rate change that Tamiment customers will experience but fails to note the context of the rate change for Tamiment customers, instead launching into a discussion of gradualism (OCA Statement No. 3 page 8). As noted above, Tamiment customers have not experienced a rate increase in over 10 years. Taking Mr. Mierzwa's calculated 81% change for Tamiment customers and calculating an annual growth rate, the change per year is only 6.1% over 10 years. Further, as discussed in

response to Mr. Kalcic, Tamiment's increase as an independent system would be greater than the increase those same customers will experience when consolidated with the rest of CUPA.

The concept of gradualism is not an excuse for a taking from CUPA; CUPA has a right to recover its allowed revenue requirement. Gradualism, as a concept, is the idea that structural changes should be made over time (i.e., gradually), not that CUPA or its shareholders should be penalized in the short or medium term for making investments and working towards efficient operation of its facilities.

First and foremost, any rate design that does not recover CUPA's revenue requirement necessitates the creation of a deferred asset through which CUPA can recover that missed revenue from customers in the future. But this creates inherent issues; it separates customers at a moment in time from the costs they impose on the system, leading to generational inequities. Further, it ultimately costs customers more, as CUPA's shareholders must be entitled to a fair return on and of any capital outlay required to suppress customers' rates in the short or medium term. CUPA is not suggesting this as a viable alternative; it is not. It is a misapplication of the concept of gradualism.

Secondly, Mr. Mierzwa conflates Tamiment's increase with that of the overall system average as he calculates various multiples, which he uses as his measurement of choice for whether gradualism has been considered. Because of the significant differences in time since Tamiment's last rate increases, this is an inaccurate comparison. Tamiment has significant shortfalls in revenues as an outcome of years without rate increases, increasing operations costs, and significant capital investments required to provide adequate service. CUPA's last rate case was in 2019, mitigating the amount of cost

changes that have compiled since its rates were last designed. CUPA customers already under consolidated rates need not support Tamiment customers until Tamiment customers are eased into consolidated rates; CUPA customers are already paying rates that more closely represent their cost to serve, which is emblematic of the lower percentage increase they will experience under CUPA's proposed rates.

CUPA has taken gradualism into consideration in its rate design already; it is not suggesting drastic rate design changes for the majority of its customers, and has made design choices (such as the proposed low-income rate) to ameliorate the impact of its additional revenue required on its most vulnerable customers. Creating a subsidy of Tamiment customers that will have to be unwound over time or taking utility property via rates that do not recover the utility's revenue requirement appear to be the only interpretations of Mr. Mierzwa's suggestions, neither of which is tenable for CUPA's existing customers or CUPA itself.

Q: **DOES CUPA AGREE WITH MR. MIERZWA'S SUGGESTION TO KEEP CUPA'S EXISTING FIXED CHARGES?**

A: No. CUPA has proposed its fixed charges based on explicit adjustments, which it has already discussed throughout testimony. Mr. Mierzwa makes the statement "I would note that the current Tamiment charge of $54.55 shown on page 16 of Mr. Miller's exhibit is actually a quarterly charge. On a monthly basis, this is $18.18, which also exceeds cost based charges" (OCA Statement No. 3 at 8). However, Mr. Mierzwa admits he has not performed a cost of service study for Tamiment in his response to CUPA data request to OCA Set 1 No. 7 (CUPA W Rebuttal Exhibit AWD-6R). Mr. Mierzwa does not have the requisite information to make such an assertion. CUPA has clearly detailed its revenue

that it proposes to recover through fixed charges, which are based on meters and services costs, billing costs, fire protection costs unrecovered from the fire protection class, and the fixed charge recovery adjustment.

CUPA asked Mr. Mierzwa how he can suggest CUPA maintain its current fixed charges in light of his conclusion that not even its current fixed charges are cost based in CUPA data request to OCA Set 1 No. 8. His response is provided here as CUPA W Rebuttal Exhibit AWD-7R, where he points CUPA back to his direct testimony. Mr. Mierzwa's direct testimony as cited provides no commentary surrounding why he is recommending no change to CUPA's fixed charges, based on his conclusion that CUPA's fixed charges are not cost based. CUPA reiterates that its proposed rates are cost based, and that full detail surrounding the costs it is proposing to recover through fixed charges is provided in my direct testimony (CUPA W Statement No. 4). CUPA's rebuttal fixed charges are higher as a result of the additional 25% of the fire protection class revenue requirement that must be recovered from other CUPA customers (CUPA W Rebuttal Exhibit AWD-1R).

Q: **DO YOU HAVE FURTHER COMMENTARY ON MR. MIERZWA'S RATE DESIGN RECOMMENDATIONS?**

A: Yes. Mr. Mierzwa points out himself that sound rate design should yield the total revenue requirement (OCA Statement No. 3 at 7). It is not clear that Mr. Mierzwa has considered this in his various recommendations. Mr. Mierzwa's recommendation that "Tamiment volumetric usage charges be moved 70 percent toward the volumetric usage charge that would have been applicable on a consolidated basis" creates one such revenue requirement miss that would need to be addressed elsewhere (OCA Statement No. 3 at 8). Mr. Mierzwa

runs through a calculation of his suggested Tamiment volumetric rate, stating "all else being equal" and that "this is calculated at the Company's proposed revenue requirement" (OCA Statement No. 3 at 8). However, one cannot hold all else equal in rate design. The impact of a change can be considered, ceteris paribus, so the impact to Tamiment customers of a rate of $9.901 can be accurately discussed, but the overall impact is mischaracterized. The consolidated volumetric rate would have to increase, so Mr. Mierzwa's comparisons at 3,000 gallons for a residential customer become invalid. The concept Mr. Mierzwa discusses is possible, but he appears not to have accurately executed it, nor has he provided workpapers demonstrating that execution appropriately. In response to CUPA data request to OCA Set 1 No. 4, Mr. Mierzwa points towards OCA-1-4.xlsx, tab E, attached here as CUPA W Rebuttal Exhibit AWD-3R. This exhibit is particularly difficult to understand due to poor labelling, incorrect rates, and various other issues, but it appears that Mr. Mierzwa attempts to identify revenues lost from maintaining fixed charges at their current level (including Tamiment's separate schedule of fixed charges), increases the volumetric rate to recover that lost revenue, and then multiplies the change in Tamiment's volumetric rate to this new volumetric rate by 70%. However, this does not complete the design – 30% of the revenue that would come through Tamiment's volumetric charge is not accounted for, so it appears Mr. Mierzwa is suggesting a taking of this utility property through his design. Mr. Mierzwa demonstrates his misunderstanding in particular of this missing 30% in his response to CUPA data request to OCA Set 1 No. 5, where he fails to address the shortfall in revenue created by his proposed design, labeled here as CUPA W Rebuttal Exhibit AWD-4R.

Further, Mr. Mierzwa fails to support his identification of 70% as the most appropriate partial movement in this rate, as CUPA data request OCA Set 1 No. 4 asks. He has simply applied that 70% and demonstrated only partially the impact it has on customer bills. In column Y, it appears Mr. Mierzwa has calculated his gradualism ratio (system average increase vs. bill increase), albeit without adjusting to compare like units (percent to percent). As discussed throughout my testimony, this ratio is not emblematic of successful gradualism, nor does it consider the long period of time Tamiment customers have gone without a rate change. Mr. Mierzwa's rates do not comply with basic goals of rate design; it does not fully recover the revenue requirement, it does not base rates on costs, and it creates inherent subsidies of Tamiment customers by other CUPA customers in the process.

Mr. Mierzwa continues on with his discussion of partial consolidation with a discussion of his recommendations for availability charges for Tamiment. Mr. Mierzwa misstates the current Tamiment availability charge as $20.90 per quarter (it is $19.14 per quarter, or $6.38 per month per CUPA W Exhibit AWD-2). Mr. Mierzwa suggests Tamiment's availability charge be moved 55% of the way towards the proposed charge, creating yet another revenue requirement miss that would need to be addressed elsewhere in rates (OCA Statement No. 3 at 9). It is not clear how Mr. Mierzwa concluded that 55% is appropriate, but it appears he is using a benchmark of 1.5 times the overall system increase for similar customers within CUPA (i.e. availability customers or residential customers using 3,000 gallons). As discussed above, his measurement figure for gradualism is flawed (fails to consider time since last rate increase), lacks a robust timeline for remedy (i.e. a suggestion that rates become fully consolidated in the next case), and at

least creates subsidization challenges and may even be proposing a form of taking of utility property. In Mr. Mierzwa's response to CUPA data request Set 1 No. 3 (CUPA W Rebuttal Exhibit AWD-2R), he admits that there is no specific source or citation for his definition of gradualism. He goes on to reference testimony from an OSBA witness in a case where the length of time since the last rate increase is not discussed – as a reminder, the absence of incremental increases over time is also an antagonist to gradualism (when incremental increases in the cost to serve are occurring, as is the case with CUPA). He further references the PA PUC Guide to Ratemaking, which goes on to quote from *Lloyd v. Pa. P.U.C.*, 904 A.2d 1010 (Pa Cmwlth. 2006), which states "…principles of gradualism cannot be allowed to trump all other valid ratemaking concerns and do not justify allowing one class of customers to subsidize the cost of service for another class of customers over an extended period of time." Directly in this guide is the statement "It is evident that rate structure has many competing interests to serve, but as Judge Pelligrini, writing for the majority, said in Lloyd, for class revenue allocation purposes, cost of service is the 'polestar'". Further, the example that Mr. Mierzwa cites is not used to establish guidelines for gradualism, as Mr. Mierzwa intimates (his 1.5 to 2.0 times system average increase, for example), but only an example of where gradualism has been applied to only partially move a class towards "unity", or parity in rate of return by class (i.e., full class cost of service recovery for each class). Mr. Mierzwa's leap towards guidelines for application of gradualism continues to lack support and does not fully consider the real circumstances surrounding the application of gradualism on behalf of Tamiment customers.

In Mr. Mierzwa's response to CUPA data request to OCA Set 1 No. 6, CUPA asks him to clarify how he can present a 1.5 times change for Tamiment availability customers

and a different level for Tamiment residential customers (1.7 was stated in the question, but his real recommendation is for a 70% movement towards consolidated rates, which Mr. Mierzwa calculates as approximately a 1.6 times change for Tamiment residential customers). Mr. Mierzwa's response is provided here as CUPA W Rebuttal Exhibit AWD-5R. It appears that Mr. Mierzwa believes that gradualism should be bestowed in a disparate fashion, and that it is acceptable to provide greater benefit to Tamiment availability customers than to Tamiment residential customers. CUPA strongly disagrees, as this erodes the foundation of gradualism; it ignores the impact per customers and arbitrarily moves some rates closer than others. CUPA's suggestion is an equivalent movement in Tamiment's rates – full consolidation. Mr. Mierzwa provides no supporting evidence that an unequal move for various Tamiment customers is preferable or better than a uniform percentage change (i.e., 100% to consolidation, as proposed by CUPA).

RATE DESIGN

Q: **DO ANY WITNESSES ADDRESS THE DESIGN OF CUPA'S PROPOSED RATES?**

A: Yes. Mr. Sakaya states "the proposed Public Fire Service, and 6-inch customer charge, and availability charges proposed by the Company are too high. I also recommend that the proposed low-income usage rate should not be implemented" (I&E Statement No. 3 at page 17). Mr. Sakaya goes on to cite the concept of gradualism and describes an across-the-board increase to rates before describing individual rate recommendations. Mr. Kalcic suggests that CUPA's adjustment for fixed charge recovery is abnormal (OSBA Statement No. 1 at 9), and makes various suggestions discussed below. Mr. Mierzwa advocates for no change in base charges from existing rates, but suggests approval of CUPA's low-

income rate as a pilot program. Mr. Mierzwa also suggests various alterations to rates to partially consolidate Tamiment with CUPA, which have been discussed above.

Q: **WHAT IS MR. SAKAYA'S SUGGESTION FOR CUPA'S PUBLIC FIRE HYDRANT CHARGE, AND DOES CUPA AGREE TO MR. SAKAYA'S PROPOSAL?**

A: Mr. Sakaya proposes a monthly flat charge of $44.00 per public fire hydrant (I&E Statement No. 3 at 18), stating that "The Company did not provide a cost of service study to support a specific increase in Public Fire service rates." Contrary to this statement, CUPA has provided a cost a service study, using the base-extra capacity method, that explicitly identifies costs attributable to fire protection services (CUPAW Ex. SAM-1). CUPA scales this cost of service outcome proportionally ($176,972 rate revenue requirement from fire protection customers) to match its revenue requirement, identifying a final cost of service for fire protection of $176,673 (CUPA W Exhibit AWD-1R – Water Rate Design). This supports a specific increase to $237.46 for CUPA's charge per hydrant per month, contrary to Mr. Sakaya's statement. CUPA did not propose to fully recover this class rate revenue requirement from the fire protection class; CUPA's original proposed design proposed that 50% of this cost of service be recovered from these fire protection customers. However, CUPA is revising this proposal to comply with Section 1328 of the Public Utility Code, as described in CUPA's response to OSBA-I-2 and cited by OSBA witness Mr. Kalcic (OSBA Statement No. 1 at 10). CUPA's revised charge per hydrant per month is $59.37 (CUPA W Rebuttal Exhibit AWD-1R – Water Rate Design), which designs for recovery of 25% of the $176,673 fire protection class rate revenue requirement. The remaining $132,505 must be recovered from CUPA's remaining

customers. CUPA continues to propose that recovery of this shortfall from the fire protection class be recovered through fixed charges from its remaining customers, as these costs do not vary with water consumption by the customers that they are now imposed on.

Q: **WHAT IS MR. SAKAYA'S SUGGESTION FOR CUPA'S 6-INCH BASE CHARGE, AND DOES CUPA AGREE TO MR. SAKAYA'S PROPOSAL?**

A: Mr. Sakaya proposes a base charge of $166.00 per month for CUPA's 6-inch customers, stating that CUPA's proposed increase "violates the concept of gradualism". Mr. Sakaya's recommendation is based on an across-the-board increase, but only applies it to these 6-inch customers.

CUPA disagrees with Mr. Sakaya's proposed change to its 6-inch rate design. CUPA has designed its base charges using AWWA M1 meter flow equivalencies, which are also used to assign costs in CUPA's cost of service study. As a result, customers with various meter sizes, including 6-inch customers, have rates designed to recover costs the same way they have been assigned in CUPA's cost of service study. Adjustments have been made to the overall fixed charge revenue requirement to maintain CUPA's fixed charge recovery and recover fire protection costs not recovered from fire hydrant customers, as described in my direct testimony (CUPAW St. No. 4 at 3-5). Because of the change that CUPA understands Section 1328 of the Public Utility Code to require, limiting the revenue recovery from public fire protection to 25% of the assigned class cost of service, the fire protection adjustment has been increased to recover the additional revenue

left unrecovered by CUPA's hydrant customers. CUPA's revised 6-inch base charge is $923.94.

Mr. Sakaya states that "A general guideline is to increase all rates the same percentage as the system average percent" (I&E Statement No. 3 at 18). However, this statement lacks appropriate context, and is not applicable in this case. CUPA has presented a class cost of service study, whose explicit purpose is to serve as a guide for rate design. The only 6-inch bills that CUPA has are in its Tamiment service territory, which does not currently use CUPA's rates (Tamiment is not currently consolidated into CUPA's tariff). As discussed, CUPA has proposed consolidating Tamiment's rates, such that all CUPA customers will have a single tariff to which to refer to understand their rates. The foundation of Tamiment's existing rates is not known, as CUPA has not previously filed a rate case to modify the rates for Tamiment – this proceeding serves that purpose. What is known is the cost of service information identified through CUPA's cost of service study, which uses generally accepted methodologies for assigning costs like using AWWA meter flow equivalencies. CUPA employs this same logic in its proposed recovery of costs it has identified for recovery through its base charges by developing a charge per equivalent meter and charge per bill, and producing a schedule of fixed charges that corresponds (CUPA W Rebuttal Exhibit AWD-1R).

Mr. Sakaya also argues that CUPA's proposed charge for 6-inch customers "violates the concept of gradualism" (I&E Statement No. 3 at 20). However, Mr. Sakaya does not discuss the outcome of failing to modify the charge for 6-inch customers; other customers will be explicitly subsidizing the 6-inch customers that exist within CUPA's service territories. CUPA has designed rates focused first on fairness. These customers

have the ability to demand flows from CUPA's water systems that would impose much steeper demands than those of a typical 5/8" meter customer. This is the core rationale for scaling rates based on AWWA flow equivalencies. A gradual change in rates for these customers only propagates subsidization by other customers. CUPA understands that these customers have not used water in some time (no volume was identified in CUPA's base period in this case), but these customers' decisions not to disconnect is independent of CUPA's necessity to be prepared to serve them.

Q: **DO YOU AGREE WITH MR. KALCIC'S STATEMENT "TRADITIONAL RATEMAKING PRACTICE WOULD LIMIT CUSTOMER CHARGES TO THE RECOVERY OF CUSTOMER-RELATED COSTS AND THEREFORE EXCLUDE THE COMPANY'S FCRA WHEN DESIGNING GMS FIXED CHARGES" (OSBA STATEMENT NO. 1 AT 9)?**

A: No. Mr. Kalcic is referring to cost-of-service based rates as traditional ratemaking practice, which mischaracterizes traditional ratemaking practice. Traditionally, and as done by CUPA in this case, a cost of service study informs a utility's rate design, but adjustments are frequently made to address rate design goals such as revenue stability, rate consistency, and affordability. This fixed charge recovery adjustment has been explicitly identified and discussed in CUPA W Statement No. 4 at 4. CUPA's goal with this adjustment is to maintain the same fixed charge recovery it currently experiences to promote revenue stability. This is well within the realm of traditional ratemaking practices.

CUPA experiences a high degree of costs in a fixed manner (costs that cannot and do not vary in the short or medium term with water usage). CUPA is proposing recovery of a share of its revenue requirement far less than those costs, and only wishes to maintain

its current revenue stability. This adjustment helps ensure CUPA's ability to achieve its allowed revenue recovery, and protects customers from rate cases driven exclusively by variance in their demand behaviors. Less frequent rate cases save customers costs through rate case expense that is not incurred, ceteris paribus.

Mr. Kalcic further states that "the Company's proposal to increase fixed charge revenues by a greater percentage than consumption charge revenues is not cost based" (OSBA Statement No. 1 at 9). However, Mr. Kalcic is mistaken here. An across-the-board increase to rates would produce the same percentage increase in all charge types. The only adjustment to CUPA's fixed charge recovery that has been made that is not representative of an across-the-board increase is its fire protection adjustment (updated in CUPA W Rebuttal Exhibit AWD-1R). This is explicitly demonstrated in CUPA's rate design. It's fixed charge recovery adjustment produces a fixed charge revenue requirement equal to an across-the-board increase. So, revenues above that level are attributable to the fire protection adjustment, which CUPA has made to comply with Section 1328 of the Public Utility Code. Mr. Kalcic's suggestion for an across-the-board increase after determining fire protection charges only differs in that it would design for recovery of fire protection related costs through volumetric charges in addition to fixed charges, which would be unrepresentative of how those costs are incurred – it is not actual fire flows which impose the largest costs on CUPA, but rather the required readiness to address fires when they do occur. This is why flat charges for hydrants are typical, and why CUPA has proposed recovery of the remaining 75% of the fire protection rate revenue requirement through its fixed charges; it better represents the underlying costs.

Q: **DO YOU AGREE WITH MR. MIERZWA'S RECOMMENDATION THAT BASE CHARGES REMAIN UNCHANGED FROM EXISTING RATES (OCA STATEMENT NO. 3 AT 4)?**

A: No. This not only fails to create a fixed charge rate design based on costs, but also fails to ameliorate design issues in existing rates, such as scaling of rates (by meter size) that is not based on the allocation bases for costs (billing costs discussion, CUPA W Statement No. 4 at 4), and propagates inequities between Tamiment and CUPA customers (in the case of base charges, Tamiment customers currently experience a higher base charge (CUPA W Exhibit AWD-2). Mr. Mierwza references CUPA W Exhibit SAM-1 as evidence of what cost-based rates would be (OCA Statement 3 at 9), but fails to acknowledge that these rates contain no adjustment for the 75% of the fire protection rate revenue requirement that must be recovered from other customers.

Q: **WHAT IS YOUR RESPONSE TO MR. SAKAYA'S SUGGESTION THAT THE COMMISSION REJECT CUPA'S PROPOSED LOW-INCOME RATE?**

A: Mr. Sakaya primarily suggests the Commission reject CUPA's proposed low-income rate because the shortfall in revenue it creates is recovered from other customers (I&E Statement No. 3 at 20). It is true that other residential customers experience modestly higher rates to enable the low-income rate; without the low-income rate, all residential customers would be charged $10.990 per kilogallon to fully recover the residential class volumetric revenue requirement (CUPA W Statement no. 4 at 6). This means that the low-income rate costs approximately $0.936 per kilogallon for regular (non low-income) residential customers, or approximately $3.28 per bill (based on usage of 3,500 gallons per bill). This change does not make CUPA's residential bills unaffordable, with only 1.39%

of median income required to pay for water service. Further, this low-income rate ensures that CUPA's low-income customers do experience affordable water bills, pushing their percentage of income to 2.20% (discussed in CUPA W Statement No. 4 at 6). Mr. Sakaya's argument that this difference between the low-income rate and regular residential rate is too steep (I&E Statement No. 3 at 21) is unsupported by evidence concerning the affordability of service for customers. While CUPA is not familiar with the PAWC low-income program Mr. Sakaya references, it is clear from his comments that it is not comparable to CUPA's proposed low-income program, nor would it be sufficient for CUPA's low-income customers. The practices of PAWC should not prohibit CUPA from making reasonable and better efforts to provide affordable service to its customers.

Q: **DO YOU AGREE WITH MR. MIERZWA'S SUGGESTION THAT FOR CUPA'S PROPOSED LOW-INCOME RATE TO COMPLY WITH VARIOUS REPORTING REQUIREMENTS IN ITS NEXT BASE RATE PROCEEDING?**

A: Yes. CUPA agrees to "identify the number of customers participating in the program and the volumetric usage of those customers" in its next rate case (OCA Statement No. 3 at 10).

Q: **WHAT IS YOUR RESPONSE TO MR. SAKAYA'S SUGGESTION THAT THE COMMISSION REJECT CUPA'S PROPOSED AVAILABILITY CHARGES?**

A: Mr. Sakaya states "As described above, the Company did not provide a cost of service study that would support a higher availability charge" (I&E Statement No. 3 at 22). However, as noted above, CUPA has provided a cost of service study, and that study

supports a higher availability charge than the $8.70 per month proposed by Mr. Sakaya (CUPAW EX SAM-1 and CUPA W Rebuttal Exhibit AWD-1R).

Mr. Sakaya further states that CUPA's proposed increase violates the concept of gradualism. However, Mr. Sakaya's recommendation would lead to a steep decrease for CUPA availability customers, which is the counterpoint to the steep increase that Mr. Sakaya references. CUPA's proposed rates will already provide a decrease to its availability customers outside of the Tamiment service territory. A primary driver for Tamiment customers is the dearth in net income that Tamiment as an independent system has experienced (CUPA W Exhibit DC-2R), which would result in a rate increase for Tamiment of over 185%. Because of the consolidation into CUPA and CUPA's proposed rate design, average bills for CUPA customers will increase less than this increase identified for Tamiment independent of CUPA. This is not universal, as CUPA's proposed rates are informed by its cost of service study, but an increase of 147% for Tamiment availability customers is reasonable with appropriate context about how costs have been assigned and how CUPA has proposed recovery of those costs.

Q: **WHAT IS YOUR RESPONSE TO MR. SAKAYA'S SUGGESTION THAT ANY TRUE-UP OF RECOVERY BE COMPLETED THROUGH CUPA'S 5/8"-METER FEE?**

A: Mr. Sakaya adjusts CUPA's 5/8" charges as an outcome of his other modifications to CUPA's rate design, which CUPA addresses above. Without those adjustments which CUPA rejects, no such adjustment is necessary. To the extent that the Commission adopts a revenue requirement that is different than that which CUPA has proposed, CUPA proposes those adjustments be made through volumetric rates. CUPA will adjust its fixed

charge recovery adjustment to maintain the same relationship in the event of changes to the revenue requirement, as described in my direct testimony (CUPA W Statement No. 4 at 4).

Q: **WHAT IS YOUR RESPONSE TO MR. MIERZWA'S SUGGESTION THAT ANY TRUE-UP OF RECOVERY BE COMPLETED THROUGH CUPA'S VOLUMETRIC AND AVAILABILITY RATES?**

A: CUPA rejects Mr. Mierzwa's suggestion that any changes to its revenue requirement be addressed through availability rates in addition to volumetric rates. CUPA proposes that any alterations in its revenue requirement be addressed through volumetric charges only, as CUPA's proposed availability charges are designed simultaneously with its base charges, which have been designed based on costs and fixed charge recovery. Addressing changes through volumetric rates provides a simpler and more effective way to address changes in the revenue requirement.

Q: **ARE THERE ANY OTHER TOPICS YOU WISH TO ADDRESS IN YOUR REBUTTAL TESTIMONY?**

A: Yes. In the process of preparing its rebuttal testimony, CUPA noticed that its billing units were overstated, particularly for the Tamiment area. A summary of billing units is presented in CUPA W Rebuttal Exhibit AWD-8R, comparing those in this case and those that better represent CUPA.

CUPA is not proposing any change to its billing units – the impact of this would be steeper rate increases for its customers. CUPA understands the difficulty that rate increases

can apply to household and commercial financial circumstances, and thus will not propose a correction to volumes and bill counts in this case.

Q: **DOES THIS CONCLUDE YOUR PREPARED REBUTTAL TESTIMONY?**

A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

CUPA W Exhibit No. AWD-1R

Community Utilities of Pennsylvania Inc.
Water
Rate Design
Future Test Year Ended December 31, 2022

Cost-of-Service Functionalization (page 11)

Functional Cost Component	COS	Proportions	Adjusted COS (to match rate revenue requirement)
Base	$ 1,123,065	40%	$ 1,121,166
Max Day	$ 352,263	13%	$ 351,667
Max Hour	$ 515,883	18%	$ 515,011
Meters/Services	$ 315,389	11%	$ 314,856
Billing	$ 334,279	12%	$ 333,714
Fire Protection	$ 176,972	6%	$ 176,673
	$ 2,817,851		$ 2,813,087

Development of Hydrant Charge

Revenue Requirement	$ 44,168	
Annualized Hydrants	744	$ 132,505
Monthly Charge per Hydrant	**$ 59.37**	

Equivalent Meters

Description	Annual Bill Count (1 bill per month)	5/8" Equivalency Factor (AWWA M1)	Equivalent Meters
Availability (Tamiment, converted to monthl	3,936	0.45	1,771
Availability (All Other)	547	0.45	246
5/8"	39,723	1.00	39,723
3/4"	-	1.50	-
1"	60	2.50	149
1.5"	12	5.00	60
2"	35	8.00	283
3"	0	15.00	-
4"	0	25.00	-
6"	24	50.00	1,200
8"	0	80.00	-
10"	0	115.00	-
12"	0	215.00	-
	44,337		43,432

Existing Fixed Charge Recovery

$	743,116	Base Charge Recovery, 2020 (ex. Fire Protection)
$	2,096,219	Total Charge Recovery, 2020
	35%	

Modification of COS for Fixed Charge Recovery

$	648,570	Meters/Services and Billing Costs	23%
$	132,505	Fire Protection Adjustment	
$	348,678	Fixed Charge Recovery Adjustment	35%
$	1,129,753		

Fixed Charge Component Development

Meters/Services	$	314,856
Fire Protection Adjustment	$	132,505
True-up for Fixed Charge Recovery	$	348,678
Revenue to be Recovered via Fixed Charge	**$**	**796,039**
Equivalent Meters		43,432
Charge per Equivalent Meter	**$**	**18.33**

Billing Component Development

Revenue Required for Billing Costs	$	333,714
Bill Count (annual, 1 per month)		44,337
Billing Component per Bill	**$**	**7.53**

Schedule of Fixed Charges	Charge (per Month)	
Availability	$ 15.77	$ 70,711.43
5/8"	$ 25.86	$ 1,027,041.36
3/4"	$ 35.02	$ -
1"	$ 53.35	$ 3,188.41
1.5"	$ 99.17	$ 1,190.02
2"	$ 154.15	$ 5,446.75
3"	$ 282.45	$ -
4"	$ 465.73	$ -
6"	$ 923.94	$ 22,174.61
8"	$ 1,473.79	$ -
10"	$ 2,115.28	$ -
12"	$ 3,948.11	$ -
Volumetric Revenue Requirement	**$ 1,639,167**	

Commercial and Residential Class Bills	Bills (Annual, 1 bill per month)	Volumes (gal)	Volume (gal) per Bill	Volumetric Revenue Requirement	Basic Volumetric Rates (per Kgal)
Residential	42,063	147,142,739	3,498	$ 1,617,052	$ 10.990
Commercial	419	2,012,313	4,802	$ 22,115	$ 10.990
Total	42,482	149,155,052		$ 1,639,167	

Median Household Income	$	63,463
Poverty Rate		12.00%
Median Household Size		2.5
Poverty Income with a 3 Person Household	$	21,960
Residentail Volume Equivalency Factor		0.35
Residential Bills Eligible for the Low-Income		5,048
Volume (Kgals)Eligible for the Low-Income R		17,657

Volume Equivalency Factor		0.35
Residential Volume Equivalents		135,595.48
Regular Residential Rate	**$**	**11.926**
Low Income Residential Rate	**$**	**4.127**

Residential Volumetric Recovery	Volume (Kgal)	Rate	Recovery
Regular Residential	129,486	$ 11.926	$ 1,544,188
Low-Income Residential	17,657	$ 4.127	$ 72,864
	147,143		$ 1,617,052

CUPA W Exhibit No. AWD-2R

Pennsylvania Office of Consumer Advocate's Responses to Community Utilities of Pennsylvania Inc.'s Interrogatories and Requests for Production of Documents, Set I

3. Regarding Mr. Mierzwa's testimony at page 8:7-11 which states "While there is no hard and fast rule with respect to applying the concept of gradualism, typically an increase of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. A rate increase of 81 percent is not consistent with the concept of gradualism," provide a source/citation which supports this statement.

RESPONSE

Mr. Mierzwa does not have a specific source/citation for this statement. It is based on his 30-plus years of utility regulatory experience. Please see Attachment OCA-1-3.pdf which includes an excerpt of the testimony of an OSBA witness in a recent proceeding supporting Mr. Mierzwa's concept of gradualism. Mr. Mierzwa's reference to 1.5 to 2.0 times the system average increase is consistent with the example of gradualism discussed on pages 147 to 148 of A Guide to Utility Ratemaking, which provided for an increase of 16.1% for the residential class compared to the total increase of 9.0%, or 1.79 times the system average increase.

https://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf

Response prepared by:
Jerome D. Mierzwa

CUPA W Exhibit No. AWD-3R

Usage	Name	W/WW	Class	Meter Size	12/31/20 Usage	BFC	Usage Rate	PWAC Surcharge	Average Bill	12/31/22 Usage	Proposed BFC*	Proposed Usage*	Proposed Average Bill	Proposed Increase	Increase %	Average Bill	Proposed Average Bill	Proposed Increase	Increase %		
0	Tamiment Service Territory	W	RES	5/8"	-	$ 18.18	$ 5.13	$ -	$ 18.18	-	$ 24.88	$ 11.95	$ 24.88	$ 6.70	36.85%	$ 18.18	$ 24.88	$ 6.70	36.85%		
1000	Tamiment Service Territory	W	RES	5/8"	1,000	$ 18.18	$ 5.13	$ -	$ 23.31	1,000	$ 24.88	$ 11.95	$ 36.83	$ 13.52	57.98%	$ 23.31	$ 36.83	$ 13.52	57.98%		
2000	Tamiment Service Territory	W	RES	5/8"	2,000	$ 18.18	$ 5.13	$ -	$ 28.44	2,000	$ 24.88	$ 11.95	$ 48.77	$ 20.33	71.49%	$ 28.44	$ 48.77	$ 20.33	71.49%		
3000	Tamiment Service Territory	W	RES	5/8"	3,000	$ 18.18	$ 5.13	$ -	$ 33.57	3,000	$ 18.18	$ 11.95	$ 54.03	$ 20.46	60.95%	$ 33.57	$ 54.03	$ 20.46	60.95%	36.8	0.016562
4000	Tamiment Service Territory	W	RES	5/8"	3,000	$ 18.18	$ 5.13	$ -	$ 33.57	3,000	$ 24.88	$ 11.95	$ 60.72	$ 27.15	80.87%	$ 33.57	$ 60.72	$ 27.15	80.87%		
5000	Tamiment Service Territory	W	RES	5/8"	3,000	$ 18.18	$ 5.13	$ -	$ 33.57	3,000	$ 18.18	$ 11.50	$ 52.67	$ 19.10	56.88%	$ 33.57	$ 52.67	$ 19.10	56.88%	36.8	0.015457
6000	Tamiment Service Territory	W	RES	5/8"	3,000	$ 18.18	$ 5.13	$ -	$ 33.57	3,000	$ 17.25	$ 11.95	$ 53.09	$ 19.52	58.14%	$ 33.57	$ 53.09	$ 19.52	58.14%	36.8	0.015799
7000	Tamiment Service Territory	W	RES	5/8"	7,000	$ 18.18	$ 5.13	$ -	$ 54.09	7,000	$ 24.88	$ 11.95	$ 108.50	$ 54.41	100.60%	$ 54.09	$ 108.50	$ 54.41	100.60%		
8000	Tamiment Service Territory	W	RES	5/8"	8,000	$ 18.18	$ 5.13	$ -	$ 59.22	8,000	$ 24.88	$ 11.95	$ 120.45	$ 61.23	103.39%	$ 59.22	$ 120.45	$ 61.23	103.39%		
9000	Tamiment Service Territory	W	RES	5/8"	9,000	$ 18.18	$ 5.13	$ -	$ 64.35	9,000	$ 24.88	$ 11.95	$ 132.39	$ 68.04	105.74%	$ 64.35	$ 132.39	$ 68.04	105.74%		
10000	Tamiment Service Territory	W	RES	5/8"	10,000	$ 18.18	$ 5.13	$ -	$ 69.48	10,000	$ 24.88	$ 11.95	$ 144.34	$ 74.86	107.74%	$ 69.48	$ 144.34	$ 74.86	107.74%		
11000	Tamiment Service Territory	W	RES	5/8"	11,000	$ 18.18	$ 5.13	$ -	$ 74.61	11,000	$ 24.88	$ 11.95	$ 156.29	$ 81.68	109.47%	$ 74.61	$ 156.29	$ 81.68	109.47%		
12000	Tamiment Service Territory	W	RES	5/8"	12,000	$ 18.18	$ 5.13	$ -	$ 79.74	12,000	$ 24.88	$ 11.95	$ 168.23	$ 88.49	110.98%	$ 79.74	$ 168.23	$ 88.49	110.98%		
13000	Tamiment Service Territory	W	RES	5/8"	13,000	$ 18.18	$ 5.13	$ -	$ 84.87	13,000	$ 24.88	$ 11.95	$ 180.18	$ 95.31	112.30%	$ 84.87	$ 180.18	$ 95.31	112.30%		
14000	Tamiment Service Territory	W	RES	5/8"	14,000	$ 18.18	$ 5.13	$ -	$ 90.00	14,000	$ 24.88	$ 11.95	$ 192.12	$ 102.12	113.47%	$ 90.00	$ 192.12	$ 102.12	113.47%		
15000	Tamiment Service Territory	W	RES	5/8"	15,000	$ 18.18	$ 5.13	$ -	$ 95.13	15,000	$ 24.88	$ 11.95	$ 204.07	$ 108.94	114.52%	$ 95.13	$ 204.07	$ 108.94	114.52%		
16000	Tamiment Service Territory	W	RES	5/8"	16,000	$ 18.18	$ 5.13	$ -	$ 100.26	16,000	$ 24.88	$ 11.95	$ 216.02	$ 115.76	115.46%	$ 100.26	$ 216.02	$ 115.76	115.46%		
17000	Tamiment Service Territory	W	RES	5/8"	17,000	$ 18.18	$ 5.13	$ -	$ 105.39	17,000	$ 24.88	$ 11.95	$ 227.96	$ 122.57	116.30%	$ 105.39	$ 227.96	$ 122.57	116.30%		
18000	Tamiment Service Territory	W	RES	5/8"	18,000	$ 18.18	$ 5.13	$ -	$ 110.52	18,000	$ 24.88	$ 11.95	$ 239.91	$ 129.39	117.07%	$ 110.52	$ 239.91	$ 129.39	117.07%		
19000	Tamiment Service Territory	W	RES	5/8"	19,000	$ 18.18	$ 5.13	$ -	$ 115.65	19,000	$ 24.88	$ 11.95	$ 251.85	$ 136.20	117.77%	$ 115.65	$ 251.85	$ 136.20	117.77%		
20000	Tamiment Service Territory	W	RES	5/8"	20,000	$ 18.18	$ 5.13	$ -	$ 120.78	20,000	$ 24.88	$ 11.95	$ 263.80	$ 143.02	118.41%	$ 120.78	$ 263.80	$ 143.02	118.41%		

			Lost customer charge revenue	$ 974,095 Proposed Res
				$ 33,051 Proposed Com
				$ 1,007,146 Proposed Total
Availability	15.43			$ 707,722 Current
	7.63			$ 299,424 Increase
	7.8			131,497,933 gallons
	4.29	0.55		131,498 kgal
	11.92	0.56225426		2.28 Increase in usage
		0.368		14.22
		1.52786484		5.13
				9.09
				6.365117069
				11.49511707

CUPA W Exhibit No. AWD-4R

Pennsylvania Office of Consumer Advocate's Responses to Community Utilities of Pennsylvania Inc.'s Interrogatories and Requests for Production of Documents, Set I

5. Please explain how "moving the current Tamiment Residential usage charge to 70 percent of the consolidated charge would result in a charge of $9.901 per 1,000 gallons" (OCA St. No. 3 at 8:18-19) results in a sound rate design that "Yield[s] the total revenue requirement", as stated at OCA St. No. 3 at 7:15-20.

RESPONSE

OCA Statement 3 at 7:15-20 refers to the overall rate design, not each specific element of rate design. In this proceeding, overall rates should be sufficient to yield the total revenue requirement.

Response prepared by:
Jerome D. Mierzwa

CUPA W Exhibit No. AWD-5R

**Pennsylvania Office of Consumer Advocate's Responses to
Community Utilities of Pennsylvania Inc.'s
Interrogatories and Requests for Production of Documents, Set I**

6. Please explain how your recommendation of a 1.7 times system average increase has been identified as appropriate for your proposed change to Tamiment's volumetric charges (OCA St. No. 3 at 8:19-21), whereas a 1.5 time system average change has been identified for Tamiment's availability charge, are consistent, as stated in OCA Statement 3, page 9:12-15.

RESPONSE

As stated in OCA Statement 3 at 7:15-20, changes in rates should be consistent with the concept of gradualism. As stated at 8:7-11, increases of 1.5 to 2.0 times the system average increase are generally considered consistent with the concept of gradualism. The 1.5 and 1.7 times system average increases are both within the 1.5 to 2.0 range.

Response prepared by:
Jerome D. Mierzwa

CUPA W Exhibit No. AWD-6R

**Pennsylvania Office of Consumer Advocate's Responses to
Community Utilities of Pennsylvania Inc.'s
Interrogatories and Requests for Production of Documents, Set I**

7. Please provide evidence that a monthly charge of $18.18 exceeds cost based charges for Tamiment, independently (OCA Statement 3, page 9).

RESPONSE

Mr. Mierzwa's statements concerning existing customer charges exceeding cost-based charges are based on page 16 of CUPA Exhibit SAM-1 (revised). Page 16 reflects the results of a cost of service study for the Westgate, Penn Estates, and Tamiment service territories on a consolidated basis. Mr. Mierzwa did not independently prepare a cost of service study for the Tamiment service territory.

Response prepared by:
Jerome D. Mierzwa

CUPA W Exhibit No. AWD-7R

**Pennsylvania Office of Consumer Advocate's Responses to
Community Utilities of Pennsylvania Inc.'s
Interrogatories and Requests for Production of Documents, Set I**

8. Please explain how your recommendation that "all current water service monthly charges be maintained and not increased as proposed by CUPA" is consistent with your analysis of customer charges relative to "cost-based charges" (OCA Statement 3 page 9).

RESPONSE

Please see OCA Statement 3 at 9:18-25, and at 10:1-2.

Response prepared by:
Jerome D. Mierzwa

CUPA W Exhibit No. AWD-8R

Community Utilities of Pennsylvania Inc.
Water Operations
Proforma Future Test Year
Future Test Year Ended December 31, 2022

	A	B	C	D	E	F	G	H	I	J	K	L
	WATER											
Line		Class	Meter Size	Meter Class	Rate Case Gallonage	Corrected Gallonage	Change	% Change	Rate Case Units	Corrected Units	Change	% Change
1												
2	Consolidated:	RES	5/8"	5/8" Res.	125,308,070	127,623,768	2,315,699	1.8%	31,515	32,017	503	1.6%
3	Consolidated:	RES	1"	1" Res.	22,042		(22,042)	-100.0%	12		(12)	-100.0%
4	Consolidated:	RES	1.5"	1.5" Res.	56,561	57,371	811	1.4%	12	12	-	0.0%
5	Consolidated:	RES	2"	2" Res.	167,836	168,224	388	0.2%	12	12	0	2.9%
6	Consolidated:	COML	5/8"	5/8" Coml.	822,961	1,003,602	180,641	22.0%	288	312	24	8.5%
7	Consolidated:	COML	1"	1" Coml.	117,413	119,824	2,412	2.1%	48	48	0	0.5%
8	Consolidated:	COML	1.5"	1.5" Coml.	-	-	-		-	-	-	
9	Consolidated:	COML	2"	2" Coml.	857,527	859,596	2,069	0.2%	24	24	0	1.4%
10	Tamiment:	RES	5/8"	5/8" Res.	21,588,231	16,893,937	(4,694,294)	-21.7%	7,884	6,039	(1,845)	-23.4%
11	Tamiment:	RES	1"	1" Res.	-	-	-		-	-	-	
12	Tamiment:	RES	1.5"	1.5" Res.	-	-	-		-	-	-	
13	Tamiment:	RES	6"	6" Res.	-	-	-		-	-	-	
14	Tamiment:	COML	5/8"	5/8" Coml.	214,413	214,413	-	0.0%	36	36	-	0.0%
15	Tamiment:	COML	1"	1" Coml.	-	-	-		-	-	-	
16	Tamiment:	COML	1.5"	1.5" Coml.	-	-	-		-	-	-	
17	Tamiment:	COML	6"	6" Coml.	-	-	-		24	12	(12)	
18												
19												
20					149,155,052	146,940,735	(2,214,317)	-1.5%	39,854	38,513	(1,341)	-3.4%
21												
22	Consolidated:	RES	Availability						547	561	14	2.5%
23	Consolidated:	COML	Unmetered - Public Fire Protection (Hydrants)						744	732	(12)	-1.6%
24	Tamiment:	RES	Availability						3,936	3,276	(660)	-16.8%
25												
26		Water Total			149,155,052	146,940,735	(2,214,317)	-1.5%	45,081	43,081	(1,999)	-4.4%
27												

CUPA W Rebuttal Exhibit AWD-8R

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3025206 & R-2021-3025207

CUPA Statement No. 5-R

Rebuttal Testimony of

Dylan W. D'Ascendis, CRRA, CVA

on behalf of

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

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I. INTRODUCTION, PURPOSE, AND SUMMARY

Q. Please state your name and business address.

A. My name is Dylan W. D'Ascendis. I am a Partner at ScottMadden, Inc. My business address is 3000 Atrium Way, Suite 200, Mount Laurel, NJ 08054.

Q. On whose behalf are you testifying?

A. I am submitting this rebuttal testimony (referred to throughout as my "Rebuttal Testimony") before the Pennsylvania Public Utility Commission ("PA PUC" or the "Commission") on behalf of Community Utilities of Pennsylvania, Inc. ("CUPA" or the "Company").

Q. Are you the same Dylan W. D'Ascendis who provided Direct Testimony in this proceeding?

A. Yes, I am.

Q. What is the purpose of this Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is two-fold. First, given the passage of time since my analyses in my Direct Testimony (as of April 26, 2021), I have updated my return on common equity ("ROE") analysis to reflect current data. Second, my Rebuttal Testimony addresses certain aspects of the direct testimonies of Mr. Christopher Keller, witness for the PA PUC's Bureau of Investigation and Enforcement ("I&E") and Mr. Noah D. Eastman, witness for the Pennsylvania Office of Consumer Advocate ("OCA") (collectively referred to as the "Opposing Witnesses") as they pertain to CUPA's allowed ROE, which the Company should have the opportunity to earn on its authorized jurisdictional rate base.

Q. Please summarize your conclusions.

A. Based on market data as of August 13, 2021, I have calculated an updated range of reasonable ROEs attributable to CUPA between 9.17% and 12.42%, and I maintain my initial recommendation of 10.35%, which continues to be reasonable, if not conservative. In view of current markets and the updated results of my ROE models, ROEs of 9.24% (Keller) and 9.34% (Eastman) are insufficient.

Q. Do you have general comments regarding the Opposing Witnesses' recommended ROEs?

A. Yes, I do. The Opposing Witnesses' recommended ROEs are insufficient, in part, because of their exclusive reliance on their discounted cash flow ("DCF") model results for their recommendations. There is both academic and practical support for the use of multiple models in an ROE analysis, which will be explained in detail below.

Q. Have you prepared an exhibit which supports your Rebuttal Testimony?

A. Yes. It has been designated as CUPA Statement No. 5-R, which consists of Schedules DWD-1R through DWD-8R.

Q. How is the remainder of your Rebuttal Testimony organized?

A. The remainder of my Rebuttal Testimony is organized as follows:

- Section II – Provides my updated analyses;
- Section III – Discusses the undue weighting of DCF model results by the Opposing Witnesses;
- Section IV – Contains my response to Mr. Keller;
- Section V – Contains my response to Mr. Eastman; and
- Section VI – Summarizes my conclusions and recommendations.

Q. Please summarize the key issues and recommendations offered by the Opposing Witnesses that you address in your Rebuttal Testimony.

A. My Rebuttal Testimony responds to substantive recommendations offered by the Opposing Witnesses in their direct testimonies. I will address the following issues common to the Opposing Witnesses' direct testimonies:

- Their undue weighting of DCF model results in their ROE recommendations;
- Their application of the capital asset pricing model ("CAPM"); and
- Their failure to reflect the greater risk of the Company due to their smaller relative size to their proxy groups.

In addition to the errors common to both testimonies, I will address Mr. Keller's recommended ROE of 0.00% for CUPA's water operations.

In sum, these factors serve to bias the Opposing Witnesses' ROE recommendations downward. My Rebuttal Testimony addresses these factors in detail, as well as other issues specific to each witness, and addresses the unfounded critiques of my Direct Testimony by the Opposing Witnesses.

II. <u>UPDATED ANALYSIS</u>

Q. Have you updated your ROE analysis for your Rebuttal Testimony?

A. Yes, I have. Due to the passage of time since my Direct Testimony (data as of April 26, 2021), I have updated my analysis using market data as of August 13, 2021 which was not available, of course, at the time of filing Direct Testimony.

Q. Have you updated your Utility Proxy Group for your updated analyses?

A. Yes, I have. In updating my proxy group selection criteria using fiscal year 2020 data, Essential Utilities, Inc. no longer has 70% or greater total assets attributable to regulated water operations. As such, I have eliminated them from my updated Proxy Group.

Q. Have you applied any of your ROE models differently in your updated analyses?

A. No, I have not.

Q. What are the results of your updated analysis?

A. Using data available as of August 13th, 2021, my updated results are presented in page 2 of Schedule DWD-1R and in Table 1, below.

Table 1: Updated Cost of Common Equity Results

Discounted Cash Flow Model	8.17%
Risk Premium Model	11.09%
Capital Asset Pricing Model	11.14%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	11.42%
Indicated Range	8.17% - 11.42%
Size Adjustment	1.00%
Recommended Range	9.17% - 12.42%
Recommended Cost of Common Equity	10.35%

In view of the unadjusted and adjusted ranges of ROE, I maintain my original ROE recommendation of 10.35%. Upon reviewing my updated results, two items became apparent: 1) the indicated results of my ROE models have generally increased from my analyses presented in my Direct Testimony, which is

a directional indicator that the investor-required return has increased since my Direct Testimony, and 2) since my recommended ROE of 10.35% is in the bottom half of my range, it is a conservative measure of the Company's ROE at this time.

III. UNDUE WEIGHTING OF DCF MODEL RESULTS

Q. Do you have a general comment regarding the Opposing Witnesses' recommended ROEs for the Companies?

A. Yes, the Opposing Witnesses' recommended ROEs of 9.24% (Keller) and 9.34% (Eastman) are inadequate, in part, because they place undue weight on their DCF model results, which tend to mis-specify the investor-required return when market-to-book ("M/B") ratios are not at unity (*i.e.,* 1.0).

Q. To what extent do the Opposing Witnesses' recommended ROEs rely on their DCF models?

A. As previously stated, the Opposing Witnesses rely exclusively on their DCF model results for their recommendations regarding the cost of common equity for the Company. As discussed in my Direct Testimony,[1] the use of multiple models adds reliability to the estimation of the common equity cost rate, with the prudence of using multiple cost of common equity models supported in both the financial literature and regulatory precedent.

Q. Are there examples from the financial literature which support the use of multiple cost of common equity models in determining the investor-required return?

A. Yes. In one example, Morin states:

1 D'Ascendis Direct Testimony, at 38.

Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. The inability of the DCF model to account for changes in relative market valuation, discussed below, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. Similarly, the inability of the CAPM to account for variables that affect security returns other than beta tarnishes its use.

No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data. (emphasis added)

* * *

The financial literature supports the use of multiple methods. Professor Eugene Brigham, a widely respected scholar and finance academician, asserts(footnote omitted):

> Three methods typically are used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) method, and (3) the bond-yield-plus-risk-premium approach. **These methods are not mutually exclusive – no method dominates the others**, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand. (emphasis added)

Another prominent finance scholar, Professor Stewart Myers, in an early pioneering article on regulatory finance, stated(footnote omitted):

> Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, **only a fool throws away useful information**. That means you should not use any one model or measure mechanically and exclusively. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data. (emphasis added)

> Reliance on multiple tests recognizes that no single methodology produces a precise definitive estimate of the cost of equity. As stated in Bonbright, Danielsen, and Kamerschen (1988), '*no single or group test or technique is conclusive*.' Only a fool discards relevant evidence. (italics in original) (emphasis added)
>
> * * *
>
> **While it is certainly appropriate to use the DCF methodology to estimate the cost of equity, there is no proof that the DCF produces a more accurate estimate of the cost of equity than other methodologies**. Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. **The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity.** It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings in contrast to its virtual disappearance in academic textbooks does not make it superior to other methods. The same is true of the Risk Premium and CAPM methodologies. (emphasis added) [2]

Finally, Brigham and Gapenski note:

> In practical work, *it is often best to use all three methods* – CAPM, bond yield plus risk premium, and DCF – and then apply judgment when the methods produce different results. People experienced in estimating equity capital costs recognize that both careful analysis and some very fine judgments are required. It would be nice to pretend that these judgments are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. Finance is in large part a matter of judgment, and we simply must face this fact. (italics in original) [3]

In the academic literature cited above, three methods are consistently mentioned: the DCF, CAPM, and the Risk Premium Model ("RPM"), all of which I used in my analyses.

---

2 Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 428-431. ("Morin")

3 Eugene F. Brigham and Louis C. Gapenski, Financial Management – Theory and Practice, 4th Ed. (The Dryden Press, 1985) at 256.

Q. Are there specific examples where the PA PUC has considered multiple cost of common equity models?

A. Yes. The Commission, in Docket No. R-2013-2360798, concerning Columbia Water Company ("Columbia"), where I was Columbia's ROE witness, stated:

> Based on our review of the testimony, data, and cost models presented, we believe that the evidence in this case supports an ROE finding in the reasonable range of 9.25% to 10.25% using the DCF method as the foundation. The equity-heavy capital structure of Columba indicates that a slightly lower ROE is appropriate. However, the small size of the Company, its management effectiveness, and the results of other ROE models other than the DCF are all reasons to set a higher ROE. Therefore, within our indicated range of reasonableness, we conclude that an ROE of 9.75% is appropriate for our ratemaking determinations herein.

Also, in Docket No. R-2014-2402324 concerning Emporium Water Company ("Emporium"), where I was Emporium's ROE witness, the Commission stated the following:

> The ALJ recommended that the Commission adopt the Company's proposed return on common equity of 11.05%.[Footnote Omitted] R.D. at 11. The ALJ explained that the Company's position allows it to pay its debt service, which includes principal payments and interest, and provides a modest return on equity ($34,000). The ALJ states that I&E's and the OCA's positions fail to meet the standards set by the *Hope* and *Bluefield* by not even allowing the Company to pay their debt service, which may lead to possible default on the loans and the bankruptcy of the Company. R.D. at 35.
>
> * * *
>
> As discussed, *supra*, the OCA recommends a return of 9.10% as the midpoint of its DCF and CE analyses; I&E recommends a return of 8.89% based on its DCF analyses; and the Company proposes a return of 10.3%, which utilizes its DCF, RP, and CAPM analyses to which the Company adds a size risk adjustment of 75 basis points. Based on our review of the testimony, data, and cost models presented, and considering our adoption of a 60% / 40% hypothetical capital structure, we believe that the range of returns provided in evidence supports an ROE finding of 10.0% for our ratemaking determinations herein.

In the Commission Orders cited above, there is clear language that the Commission considers multiple models in its determination of ROE. It is also my interpretation of these Orders that the Commission correctly observes capital market conditions and their effect on the model results in determining an ROE for utility companies. This, in addition to the academic literature cited above, shows that the Opposing Witnesses' reasoning behind relying solely on the DCF for their recommended ROEs is misplaced.

Q. In addition to the above, why is primary reliance on the DCF model generally problematic?

A. Traditional rate base / rate of return regulation, where a market-based common equity cost rate is applied to a book value rate base, presumes that the M/B ratios are at unity or 1.00. However, that is rarely the case. Morin states:

> The third and perhaps most important reason for caution and skepticism is that application of the DCF model produces estimates of common equity cost that are consistent with investors' expected return only when stock price and book value are reasonably similar, that is, when the M/B is close to unity. As shown below, application of the standard DCF model to utility stocks understates the investor's expected return when the market-to-book (M/B) ratio of a given stock exceeds unity. This was particularly relevant in the capital market environment of the 1990s and 2000s where utility stocks were trading at M/B ratios well above unity and have been for nearly two decades. The converse is also true, that is, the DCF model overstates that investor's return when the stock's M/B ratio is less than unity. The reason for the distortion is that the DCF market return is applied to a book value rate base by the regulator, that is, a utility's earnings are limited to earnings on a book value rate base[4].

As he explains, DCF models assume an M/B ratio of 1.0 and therefore under- or over-states investors' required return when market value exceeds or is less than book value, respectively. It does so because equity investors evaluate

4 Morin, at 434.

and receive their returns on the market value of a utility's common equity, whereas regulators authorize returns on the book value of common equity. This means that the market-based DCF will produce the total annual dollar return expected by investors, only when market and book values of common equity are equal, a very rare and unlikely situation.

Q. Why do market and book values diverge?

A. Market values can diverge from book values for a myriad of reasons including, but not limited to, earnings per share ("EPS") and dividends per share ("DPS") expectations, merger / acquisition expectations, interest rates, etc. As noted by Phillips:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.[5]

In addition, Bonbright states:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, *whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market*. In short, market prices are beyond the control, though not beyond the influence of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it ... would result in harmful, uneconomic shifts in public utility rate levels. (italics added)[6]

5 Charles F. Phillips, The Regulation of Public Utilities, Public Utilities Reports, Inc., 1993, at 395.
6 James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988), at 334.

Q. Can the under- or over-statement of investors' required return by the DCF model be demonstrated mathematically?

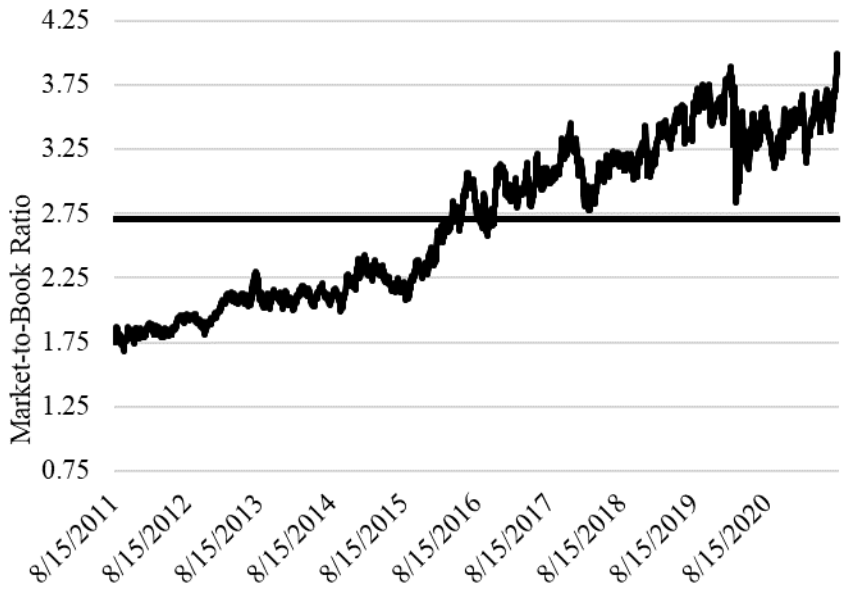
A. Yes. Schedule DWD-2R demonstrates how market-based DCF cost rates of 9.24% and 9.34%, when applied to a book value substantially below market value, will understate investors' required return on market value. As shown, there is no realistic opportunity to earn the expected market-based rate of return on book value. For example, in Column [A], investors expect a 9.24% return on an average market price of $73.87 for Mr. Keller's proxy group. Column [B] shows that when Mr. Keller's 9.24% return rate is applied to a book value of $21.90,[7] the total annual return opportunity is $2.02. After subtracting dividends of $1.41, the investor only has the opportunity for $0.61 in market appreciation, or 0.83%. The magnitude of the understatement of investors' required return on market value using Mr. Keller's 9.24% cost rate is 6.50%, which is calculated by subtracting the market appreciation based on book value of 0.83% from Mr. Keller's expected growth rate of 7.33%. A similar understatement of 6.67% is indicated for Mr. Eastman's DCF cost rate.

Q. How do M/B ratios of the Opposing Witnesses proxy group compare to the ten-year average?

A. The M/B ratio of the Opposing Witnesses' proxy groups are currently extraordinarily high compared to their ten-year averages. As shown in Chart 1 below, since 2016, the M/B ratio of the Opposing Witnesses' proxy groups have been above the ten-year average M/B ratio of approximately 2.70 times.

7 Representing a market-to-book ratio of 337.36%.

Chart 1: M/B Ratios of The Opposing Witness' Proxy Groups Compared With Ten-Year Average[8]



The significance of this is that even though the ten-year average M/B ratio has always been above 1.0x, the current M/B ratio is even further removed from 1.0x, further distorting DCF results.

Q. Is there another way to quantify the inaccuracy of the DCF model when M/B ratios are different than unity?

A. Yes. One can quantify the inaccuracy of the DCF model when M/B ratios are not at unity by estimating the implied DCF model results (based on a market-value capital structure) to reflect a book-value capital structure. This can be measured by first calculating the market value of each proxy company's capital structure, which consists of the market value of the company's common equity (shares outstanding multiplied by price), and the fair value of the company's long-term debt

8 Source: Bloomberg Financial Services.

and preferred stock. All of these measures, except for price, are available in each company's SEC Form 10-K.

Second, one must de-leverage the implied cost of common equity based on the DCF. This is derived using the Modigliani / Miller equation[9] as illustrated in Schedule DWD-3R and shown below:

$$ku = ke - (((ku - i)(1 - t))\ D/E) - (ku - d)\ P/E \quad \text{[Equation 1]}$$

where:

ku	=	Unlevered (i.e., 100% equity) cost of common equity;
ke	=	Market determined cost of common equity;
i	=	Cost of debt;
t	=	Income tax rate;
D	=	Debt ratio;
E	=	Equity ratio;
d	=	Cost of preferred stock; and
P	=	Preferred equity ratio.

For example, using data specific to Mr. Keller's proxy group, the equation becomes:

$$ku = 9.24\% - (((ku – 5.05\%)(1 - 21\%))\ 21.82\% / 78.16\%) - (ku – 5.76\%)\ 0.02\% / 78.16\%$$

Solving for ku results in an unlevered cost of common equity of 8.48%.

Next, one must re-lever those costs of common equity by relating them to each proxy group's average book capital structure as shown below:

$$ke = ku + (((ku – i)(1 – t))\ D/E) + (ku – d)\ P/E \quad \text{[Equation 2]}$$

9 The Modigliani / Miller theorem is an influential element of economic theory and forms the basis for modern theory on capital structure. *See,* Modigliani, F., and Miller, M. "The Cost of Capital, Corporation Finance and the Theory of Investment", *The American Economic Review*, Vol. 48, No. 3, (June 1958), at 261-297.

Once again, using data specific to Mr. Keller's proxy group, the equation becomes:

ke =8.48% + (((8.48%-5.05%)(1-21%))48.11%/51.84%) + (8.48%-5.76%)0.05%/51.84%

Solving for ke results in an 11.00% indicated cost of common equity relative to the book capital structure of the proxy group, which is an increase of 1.76% over Mr. Keller's indicated DCF result of 9.24%. A similar increase of 1.80% is seen when the same analysis is performed on Mr. Eastman's recommended ROE of 9.34%.

The leverage-adjusted DCF results of the Opposing Witnesses are still not applicable to the Company, as they do not reflect the higher risk that the Company faces relative to the proxy group, given the Company's smaller size. Additionally, as stated above, consideration of multiple ROE models is also necessary to gain further insight into the investor-required return, where the DCF is only one tool among many.

Q. Has this Commission recognized this tendency of the DCF model to mis-specify investors' required return when M/B ratios are not at unity?

A. Yes. This Commission recognized this tendency in its order of August 26, 2005 in *The City of Lancaster – Sewer Fund,* Docket Nos. R-00049862, et al., when it adopted the Administrative Law Judge's market-to-book adjustment of 65 basis points (0.65%) because such an adjustment was "consistent with our recent orders in *PAWC, Aqua,* and *PPL*" and "as in *PPL*, we find that adjustment is necessary <u>because the DCF method produces the investor required return based on the current market price, not the return on the book value capitalization.</u>" With the MTB adjustment, the equity return allowance is 10.75 percent. (emphasis added)

In 2007, the PA PUC again affirmed the tendency of the DCF model to mis-specify investors' required return in its Order of February 8, 2007 in *PPL Gas Utilities Corporation,* Docket No. R-00061398, et al., when it stated:

> The ALJ stated that the OTS and the OCA are correct that the Commission favors the DCF method to determine the cost of equity. However, the ALJ concluded, based on recent precedent, that the Commission consistently has adopted a leverage adjustment to compensate for the difference between market prices and book value (used in ratemaking). (*See, Aqua Pennsylvania*, 204, 234 (2004); *Pa. PUC v. PPL Electric Utilities Corp*., Docket No. R-00049255, at 70-71 (2004); *Pa. PUC v. Pennsylvania American Water Co.*, 2002 Pa. PUC LEXIS 1; *Pa. PUC v. Phila. Suburban Water Co*., 219 PUR4TH 272 (2002); *Pa. PUC v. Pennsylvania American Water Co*., 231 PUR4TH 277 (2004)). According to the ALJ, these cases are persuasive that a leverage adjustment should be employed with the DCF analysis. (R.D. at 62-63).

Q. Are you advocating a specific adjustment to the DCF results to correct for its mis-specification of the investor-required return?

A. No. The purpose of this discussion is to demonstrate that, like all cost of common equity models, the DCF has its limitations and that the use of multiple cost of common equity models in conjunction with informed expert judgment provides a more accurate and reliable picture of the investor-required ROE than does a narrow evaluation of the results of one model.

IV. <u>RESPONSE TO I&E WITNESS KELLER</u>

Q. Please summarize Mr. Keller's recommendations.

A. Mr. Keller accepts the Company's proposed capital structure, which consists of 52.32% long-term debt and 47.68% common equity. Mr. Keller also accepts the Company's proposed debt cost rate of 5.05%.[10] Regarding the ROE, Mr. Keller

10 Keller Direct Testimony, at 9-11 (Wastewater Testimony).

recommends the Commission authorize CUPA's water operations an ROE of 0.00% because he claims "the Company is not meeting its obligation to provide adequate and reasonable service to its customers."[11] For CUPA's wastewater operations, Mr. Keller recommends an ROE of 9.24%,[12] which is based solely on the results of his DCF model, as discussed previously.

Q. How does Mr. Keller's ROE recommendation compare with the recently published (July 15, 2021) PA PUC Bureau of Technical Utility Services ("BTUS") report on the quarterly earnings of jurisdictional utilities for the year ended March 31, 2021, used to set the ROE for Utilities' Distribution System Improvement Charge ("DSIC")?

A. Not well. The BTUS calculated a 9.85% ROE applicable to water and wastewater utilities for their DSIC investments, which is over 60 basis points higher than Mr. Keller's and 50 basis points higher than Mr. Eastman's recommendations in this proceeding.

Q. Would the BTUS DSIC ROE understate the ROE for a vertically-integrated water and wastewater utility like CUPA?

A. Yes, it would. The BTUS DSIC ROE applies only to transmission and distribution investments, which is low-risk compared to the production and treatment of water and wastewater. As such, the BTUS DSIC ROE of 9.85% should be considered a floor for an acceptable ROE for CUPA.

11 Keller Direct Testimony, at 18 (Water Testimony).
12 Keller Direct Testimony, at 5 (Wastewater Testimony).

Q. In addition to the undue weighting of his DCF model results, what are the additional areas of disagreement between you and Mr. Keller?

A. In addition to disagreeing with the weight given to his DCF model results, I also disagree with 1) his recommended ROE of 0.00% for the Company's water operations; 2) his use of a 10-year Treasury bond in his CAPM analysis; 2) his failure to use a fully-projected risk-free rate in his CAPM analysis; 3) his failure to use the empirical CAPM ("ECAPM") in his CAPM analysis; and 4) his failure to reflect the Company's smaller size compared to his proxy group.

A. <u>0.00% RECOMMENDATION FOR WATER OPERATIONS</u>

Q. Do you agree with Mr. Keller's ROE recommendation for the Company's water operations?

A. No, I do not. As stated in my Direct Testimony, utilities must have sufficient earnings in order to attract new capital from investors.[13] Mr. Keller's recommended zero ROE for the Company's water operations will materially impact the speed and cost with which the Company meets its customers' needs. Company Witness Emily Long will address Mr. Keller's testimony as it relates to customer complaints and his reliance upon lay opinions on water quality or water system operations.

Q. Please discuss the impact of a ROE of 0.00% for the Company's water operations.

A. Generally, the cost of capital is an opportunity cost, which means that the true cost of capital is the return that could have been realized on the next best available investment of similar risk. If CUPA is authorized an ROE of 0.00%, investors,

13 D'Ascendis Direct Testimony, at 7.

including CUPA's parent company, will simply invest where the opportunity to earn a higher ROE exists, given their risk level. CUPA competes for capital with other utilities, many of which have authorized/earned ROEs higher than theirs. An authorized return of 0.00% will further deteriorate CUPA's financial position and would impact the willingness of equity investors to provide capital. This, in turn, would impact the speed and cost with which the Company will be able to meet customers' needs. While management would still seek to serve customers as well as possible within those changed capital conditions, costs to customers would surely rise and capital would be deployed more slowly. Moreover, while under current market conditions one might not expect a complete loss of access to capital, market conditions could occur where the capital constraints can jeopardize CUPA's access to capital at any cost.

Q. Are there any other effects of an authorized ROE of 0.00% for CUPA?

A. Yes, there are. An authorized ROE of 0.00% for CUPA can have a dual impact of not only the direct financial impact to CUPA, but also the impact of the Commission's relationship to the utilities in their regulatory jurisdiction. The regulatory environment is one of the most important issues considered by both debt and equity investors in assessing the risks and prospects of utility companies. Moody's Investors Service finds the regulatory environment to be so important that 50.00% of the factors that weigh in the Company's ratings determination are determined by the nature of regulation:

> For rate-regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations. The regulatory environment is comprised of two rating factors - the Regulatory Framework and its corollary factor, the Ability to Recover Costs and Earn Returns. Broadly speaking, the Regulatory

> Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation. The Ability to Recover Costs and Earn Returns relates more directly to the actual decisions, including their timeliness and the rate-setting outcomes.[14]

Similarly, Standard & Poor's ("S&P") has noted that:

> The assessment of regulatory risk is perhaps the most important factor in Standard & Poor's Ratings Services' analysis of a U.S. regulated, investor-owned utility's business risk. Each of the other four factors we examine--markets, operations, competitiveness, and management--can affect the quality of the regulation a utility experiences, but we believe the fundamental regulatory environment in the jurisdictions in which a utility operates often influences credit quality the most.[15]

In summary, the adoption of a 0.00% ROE for CUPA's water operations would ultimately harm CUPA, its customers, and damage investor's perception of the Pennsylvania regulatory climate.

B. <u>APPLICATION OF THE CAPM</u>

Q. Please briefly summarize Mr. Keller's CAPM methodology and results.

A. Mr. Keller uses the average *Value Line Investors Service ("Value Line")* beta of his proxy group, a projected 10-year Treasury yield for his risk-free rate, and an average of two expectational market returns to arrive at his CAPM result of 9.56%.[16]

Q. Do you have any concerns with Mr. Keller's application of the CAPM?

A. Yes, I do. While I agree with Mr. Keller's use of *Value Line* betas, projected interest rates, and projections of market returns, I have concerns regarding his selection of a risk-free rate and his failure to conduct an ECAPM.

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14 *See,* Moody's Investors Service, *Rating Methodology; Regulated Gas and Electric Utilities*, June 23, 2017, at 4.
15 Standard & Poor's, *Utilities: Assessing U.S. Utility Regulatory Environments*, November 15, 2011.
16 Keller Direct Testimony, at 29.

Q. Please comment on Mr. Keller's use of 10-year treasury bonds as his risk-free rate in his CAPM analysis.

A. As discussed below, the tenor of the risk-free rate used in the CAPM should match the life (or duration) of the underlying investment. As noted by Morningstar:

> The traditional thinking regarding the time horizon of the chosen Treasury security is that it should match the time horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[17]

Morin also confirms this when he states:

> [b]ecause common stock is a long-term investment and because the cash flows to investors in the form of dividends last indefinitely, the yield on very long-term government bonds, namely, the yield on 30-year Treasury bonds, is the best measure of the risk-free rate for use in the CAPM (footnote omitted)… The expected common stock return is based on long-term cash flows, regardless of an individual's holding time period.[18]

Pratt and Grabowski recommend a similar approach to selecting the risk-free rate: "In theory, when determining the risk-free rate and the matching ERP you should be matching the risk-free security and the ERP with the period in which the investment cash flows are expected."[19] To that point, a 2004 paper titled *Applying The Capital Asset Pricing Model* by Robert Harris reviews current practices for application of the CAPM and, when summarizing best current practices, concludes "[t]he risk-free rate should match the tenor of the cash flows

17 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 44.
18 Morin, at 151.
19 Shannon Pratt and Roger Grabowski, Cost of Capital: Applications and Examples, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008), at 92. "ERP" is the Equity Risk Premium.

being valued."[20] As a practical matter, equity securities represent a perpetual claim on cash flows; 30-year Treasury bonds are the longest-maturity securities available to match that perpetual claim. Mr. Keller's use of a medium-term Treasury bond does not match the life of the assets being valued. The use of a 30-year Treasury bond is the more appropriate risk-free rate.

Q. Please discuss Mr. Keller's projected risk-free rate.

A. Mr. Keller and I use the same publication for our forecasted interest rate data, *Blue Chip Financial Forecasts* ("*Blue Chip*"). Mr. Keller incorporates forecasts from the third quarter of 2020 out to the period 2023-2027, although forecasts are published by *Blue Chip* to the period 2028-2032. Not incorporating the longest projection available is inconsistent with his application of the DCF model in which there is an assumption that the projected "g" is constant into perpetuity, creating a mismatch. It is also inconsistent with the Efficient Market Hypothesis ("EMH") on which the DCF is based. According to Fama,[21] a market in which prices always "fully reflect" available information is called "efficient." There are three forms of the EMH, namely:

(1) The "weak" form asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis cannot enable an investor to "outperform the market."

(2) The "semi-strong" form asserts that all publicly available information is fully reflected in securities prices. In other words, fundamental analysis cannot enable an investor to "outperform the market."

20 Paper cited with permission of author.
21 Eugene F. Fama. "Efficient Capital Markets: A Review of Theory and Empirical Work", *The Journal of Finance*, Vol. 25, No. 2. (May 1970), pp. 383-417.

(3) The "strong" form asserts that all information, both public and private, is fully reflected in securities prices. In other words, even insider information cannot enable an investor to "outperform the market."

The "semi-strong" form is generally considered the most realistic because the illegal use of insider information can enable an investor to "beat the market" and earn excessive returns, thereby disproving the "strong" form. The semi-strong form of the EMH assumes that all information (including long-term forecasts of interest rates) are available to the investor, which means the 2028-2032 forecasted interest rate would be considered by investors when making investment decisions and, therefore, should be included in Mr. Keller's CAPM analysis.

Q. Mr. Keller did not perform an ECAPM analysis. Please comment.

A. As discussed in my Direct Testimony,[22] although numerous tests of the CAPM have confirmed its validity, it has been determined that the empirical Security Market Line ("SML") described by the traditional CAPM is not as steeply sloped as the predicted SML. Tests of the CAPM have measured the extent to which security returns and betas are related as predicted by the CAPM, thus confirming its validity. As such, Mr. Keller should have used the ECAPM in his CAPM analysis.

Q. Is there any additional evidence to support the use of the ECAPM?

A. Yes, there is. Dianna R. Harrington summarizes studies on the predicted results of the CAPM versus the actual returns in her text Modern Portfolio Theory & the Capital Asset Pricing Model:

> So far we have learned some very interesting things about the CAPM and reality. Some of the earliest work tested realized data (history) against data generated by simulated portfolios. Early studies by Douglas (1969) and Lintner (Douglas [1969]) showed discrepancies

22 D'Ascendis Direct Testimony, at 29-30.

between what was expected on the basis of the CAPM and the actual relationships that were apparent in the capital markets. Theoretically, the minimal rate of return from the portfolios (the intercept) and the actual risk-free rate for the period should have been equal. They were not.

* * *

Another study, now more famous than Lintner's was done by Black, Jensen, and Scholes (1972). Lintner had used what is called a cross-sectional method (looking at a number of stock returns during one time period), whereas Black, Jensen, and Scholes used a time-series method (using returns for a number of stocks over several time periods). To make their test, Black, Jensen, and Scholes assumed that what had happened in the past was a good proxy for the investor expectations (a frequent assumption in CAPM tests). Using historical data, they generated estimates using what we call the market model:

$$R_{jt} = \alpha_j + \beta_j (R_{mt}) + \varepsilon_j$$

Where:

R = total returns

β = the slope of the line (the incremental return for risk)

α = the intercept or a constant (expected to be 0 over time and across all firms)

ε = an error term (expected to be random, without information)

m = the market proxy

j = the firm or portfolio

t = the time period

Instead of using single stocks, they formed portfolios in an effort to wash out one source of error; because betas of single firms are quite unstable. On the basis of the CAPM, they expected to find

1. That the intercept was equal to the risk-free rate (their proxy was the Treasury bill rate)

2. That the capital market line had a positive slope and that riskier (higher beta) securities provided higher return

Instead they found

1. That the intercept was different from the risk-free rate

2. That high-risk securities earned less and low-risk securities earned more than predicted by the model

3. That the intercept seemed to depend on the beta of any asset: high-beta stocks had a different intercept than low-beta stocks

* * *

> Fama and MacBeth (1974) criticized the Black, Jensen, and Scholes study (hereafter called BJS). In a reformation of the study, they supported the first of the BJS findings. They found that the intercept exceeded the risk-free proxy, but did not find the evidence to support the other BJS conclusions.[23]

Harrington discusses Black's potential solution to this phenomenon:

> Black's replacement for the risk-free asset was a portfolio that had no covariability with the market portfolio. Because the relevant risk in the CAPM is systematic risk, a risk-free asset would be the one with no volatility relative to the market – that is, a portfolio with a beta of zero. All investor-perceived levels of risk could be obtained from various linear combinations of Black's zero-beta portfolio and the market portfolio… Since R_z (the rate of return of the zero-beta asset) and R_m are uncorrelated (as R_f and R_m were assumed to be in the simple CAPM), the investor can choose from various combinations of R_z and R_m. On segment R_mY, R_z, is sold short and proceeds are invested in R_m. On segment R_zR_m, portions of the zero-beta portfolio are purchased. At R_m, the investor is fully invested in the market portfolio. The equilibrium CAPM was rewritten by Black as follows:
>
> $$E(R_i) = (1 - \beta_i)\, E(R_z) + \beta_i E(R_m)$$
>
> *Where:*
>
> E indicates expected,
>
> $E(R_z)$ is less than $E(R_m)$, and
>
> R_z holdings over the whole market must be in equilibrium. That is, the number of short sellers and lenders of securities must be equal.
>
> Black's adaptation is intriguing. The result of using this model is a capital market line that has a less steep slope and a higher intercept than those of the simple CAPM. If Black's model is more correct in its description of investor behavior in the marketplace, then the use of the simple model would produce equity return predictions that

23 Dianna R. Harrington, Modern Portfolio Theory & the Capital Asset Pricing Model – A User's Guide, Prentice-Hall, Inc. 1983, at 43-45.

would be too low for sticks with betas greater than one and too high for stocks with betas of less than one.[24]

Q. Does Mr. Keller have concerns regarding the ECAPM?

A. Yes, he does. Mr. Keller claims that the ECAPM "corrects none of the underlying problems of the CAPM"[25] without providing evidence to that effect. Conversely, I have provided substantial evidence that the ECAPM is a necessary adjustment to the CAPM in my Direct Testimony and above. Mr. Keller's concerns should be given no weight by the Commission.

Q. What would Mr. Keller's CAPM results indicate if corrected to reflect a fully forecasted 30-year treasury bond yield and the use of the ECAPM?

A. As shown in Schedule DWD-4R, using a fully projected 30-year Treasury bond yield and employing the ECAPM would result in an indicated ROE of 10.06%. This indicated result is still understated, as it does not reflect CUPA's small size relative to the proxy group.

C. FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE

Q. Does Mr. Keller make a specific adjustment to reflect the smaller size of the Company relative to his proxy group?

A. No. As discussed in my Direct Testimony,[26] relative company size is a significant element of business risk for which investors expect to be compensated through greater returns. Smaller companies are simply less able to cope with significant events which affect sales, revenues and earnings. For example, smaller

24 Dianna R. Harrington, Modern Portfolio Theory & the Capital Asset Pricing Model – A User's Guide, Prentice-Hall, Inc. 1983, at 31-32.
25 Keller Direct Testimony, at 29 (Wastewater Testimony).
26 D'Ascendis Direct Testimony, at 39-43.

companies face more exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few large customers would have a far greater effect on a small company than on a larger company with a more diverse customer base. Finally, smaller companies are generally less diverse in their operations and have less financial flexibility. Consistent with the financial principle of risk and return in my Direct Testimony,[27] such increased risk due to small size must be taken into account in the allowed rate of return on common equity.

Q. Does Mr. Keller rely on studies that support the small size premium?

A. Yes. In the Fama and French article cited by Mr. Keller in his direct testimony, the authors propose that their three-factor model include the "Small Minus Big" factor, which indicates that small capitalization firms are more risky than large capitalization firms,[28] confirming that size is a risk factor which must be taken into account in estimating the cost of common equity.

Q. Is there another empirical study in addition to the empirical analysis you performed in your Direct Testimony that evaluates the effect of size on the cost of equity?

A. Yes. Duff & Phelps' ("D&P") 2020 Valuation Handbook Guide to Cost of Capital – Market Results through 2019 presents a Size Study based on the relationship of various measures of size and return. Relative to the relationship between average annual return and the various measures of size, D&P state:

> **The size of a company is one of the most important risk elements to consider when developing cost of equity estimates**

27 D'Ascendis Direct Testimony, at 11.
28 Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence", *Journal of Economic Perspectives*, Vol. 18, No. 3, Summer 2004, at 39.

> **for use in valuing** a firm. Traditionally, researchers have used market value of equity (*i.e.,* "market capitalization" or "market cap") as a measure of size in conducting historical rate of return research. For example, the Center for Research in Security Prices (CRSP) "deciles" are developed by sorting U.S. companies by market capitalization. Another example is the Fama-French "Small Minus Big" (SMB) series, which is the difference in return of "small" stocks minus "big" (*i.e.*, large) stocks, as defined by market capitalization. (emphasis added) [29]

The Size Study uses the following eight measures of size, all of which have empirically shown that over the long-term, the smaller the company, the higher the risk:

- Market Value of Common Equity (or total capital if no debt / equity);
- Book Value of Common Equity;
- Net Income (five-year average);
- Market Value of Invested Capital;
- Total Assets (Invested Capital);
- Earnings Before Interest, Taxes, Depreciation & Amortization ("EBITDA") (five-year average);
- Sales / Operating Revenues; and
- Number of Employees.

I used the D&P Size Study to determine the approximate magnitude of any necessary risk premium due to the size of the Company relative to Mr. Keller's and Mr. Eastman's proxy groups. Schedule DWD-5R shows the relative size of each Company compared with the proxy groups. Indicated size adjustments based on these relative measures range from 1.13% to 3.37% for CUPA. From these

29 Duff & Phelps' 2020 Valuation Handbook Guide to Cost of Capital – Market Results through 2019, at p. 10-1.

results, it is clear that the Company is riskier than the Opposing Witness' proxy groups due to its small size, and that my proposed size adjustment of 100 basis points for the Company is conservative.

Q. Mr. Keller says that your size adjustment is not specific to utilities because the study you cite uses data from the New York Stock Exchange, American Stock Exchange and National Association of Security Dealers Automated Quotation System. Is this a valid criticism?

A. No. While the study does use data from these exchanges, all utility companies are traded on one of these exchanges, including the proxy group companies. This means that utilities are, indeed, part of the size study I use to derive my size adjustment.

Q. Mr. Keller cites a study by Dr. Annie Wong for the proposition that there is no size premium for utilities. Does this study establish that contention?

A. No. Dr. Wong's study is flawed because she attempts to relate a change in size to beta coefficients, which accounts for only a small percentage of diversifiable company-specific risk. However, size is company-specific and therefore diversifiable.

Q. Is there also a published response to Dr. Wong's article?

A. Yes, there is. In response to Professor Wong's article, *The Quarterly Review of Economics and Finance* published an article in 2003, authored by Thomas M. Zepp, which commented on the Wong article cited by the I&E ROE Witnesses. Relative to Dr. Wong's results, Dr. Zepp concluded in the Abstract on page 1 of his article: "Her weak results, however, do not rule out the possibility of a small firm

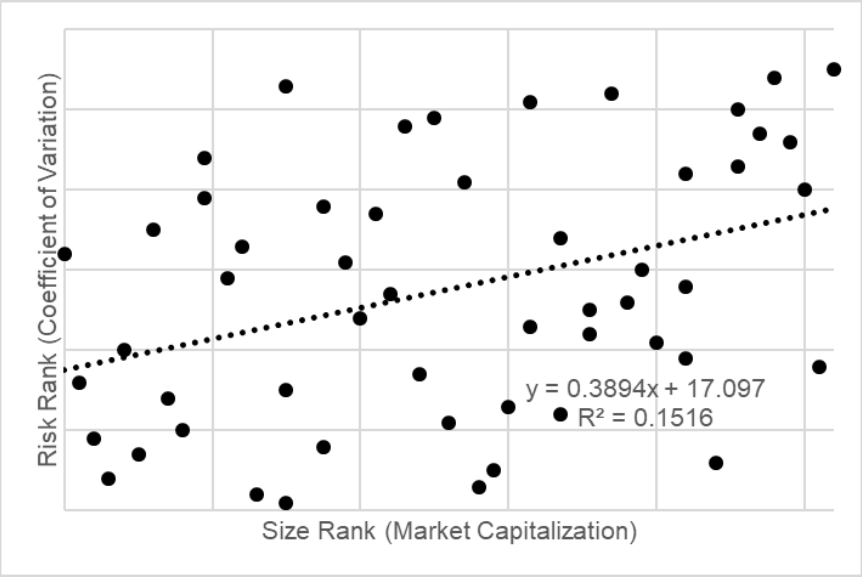
effect for utilities."[30] Dr. Zepp also noted on page 582 that: "Two other studies discussed here support a conclusion that smaller water utility stocks are more risky than larger ones. To the extent that water utilities are representative of all utilities, there is support for smaller utilities being more risky than larger ones."[31]

Q. Have you performed a study linking size and risk for utility companies?

A. Yes. I performed a study on whether or not the size effect is in fact applicable to utilities. My study included the universe of electric, gas, and water companies included in *Value Line Standard Edition.* From each of the utilities' *Value Line Ratings & Reports*, I calculated the 10-year coefficient of variation[32] ("CoV") of net profit (a measure of risk) and current market capitalization (a measure of size) for each company. After ranking the companies by size (largest to smallest) and risk (least risky to most risky), I made a scatter plot of the data, as shown on Chart 2, below:

30 Thomas M. Zepp, "Utility Stocks and the Size Effect --- Revisited", *The Quarterly Review of Economics and Finance*, 43 (2003), at 578-582.
31 *Ibid, at 578-583.*
32 The coefficient of variation is used by investors and economists to determine volatility.

Chart 2: Relationship Between Size and Risk For The *Value Line* Universe of Utility Companies



As shown in Chart 2 above, as company size decreases (increasing size rank), the CoV increases, linking size and risk for utilities.

Q. Finally, does this Commission consider size in determining the authorized ROE?

A. Yes. In Docket No. R-2019-3008212, the Commission stated:

> Based on the evidence of record, we agree with he recommendation of the ALJs that the Company be awarded a DCF cost of common equity which is one standard deviation about the average of the mean and median proxy group ROE from the Company's DCF analysis. In so doing, we recognize that the Company's size is a factor in assessing its ability to attract capital. Accordingly, we shall reject Citizens' Exception No. 10, I&E's Exception No. 4, and the OCA's Exception No. 7, consistent with the following discussion.
>
> We are not convinced by the arguments of I&E and the OCA that the ALJs erred in awarding a size adjustment to Citizens'. Rather, we are of the same position as the ALJs that the Company's witness Mr. D'Ascendis offered persuasive record evidence that there is a general inverse relationship between size and risk, such that smaller utilities like Citizens' face greater risk.[33]

33 Pennsylvania Public Utility Commission, Docket No. R-2019-3008212, Opinion and Order, at 103.

Q. What would be the ROE result using the Commission's method in this case?

A. The average of the mean and median DCF model result is 8.17%, as shown on page 3 of Schedule DWD-1R. The standard deviation of those results are 2.34%. Adding the standard deviation to the average of the mean and median DCF result would indicate an ROE of 10.51% for CUPA, which is in my recommended range of ROEs, but higher than my ultimate recommendation in this case. In view of this, my size adjustment should be considered conservative.

D. RESPONSE TO MR. KELLER'S CRITICISMS OF MY DIRECT TESTIMONY

Q. Does Mr. Keller have critiques of the analyses made in your Direct Testimony?

A. Yes. Mr. Keller has the following critiques of my analyses in my Direct Testimony: 1) that I have given weight to models other than the DCF in my determination of the ROE for the Company; 2) that the predictive risk premium model ("PRPM") is relatively new and not commonly used and cannot be performed without expense; 3) that my risk-free rate should be based upon the 10-year Treasury bond yield instead of the 30-year Treasury bond yield; 4) that the ECAPM is inappropriate for cost of capital purposes; 5) that my selection and use of a Non-Price Regulated Proxy Group similar in total risk to my Proxy Group is "speculative and subjective";[34] and 6) that the size adjustment I use is not applicable to utility companies.

As I addressed points 3), 4), and 6) in my response to Mr. Keller's analyses, I will not address them again here. I will address the remaining critiques in turn.

34 Keller Direct Testimony, at 33.

Q. Mr. Keller does not agree with your giving weight to any of your other ROE model results besides the DCF.[35] Please respond.

A. As discussed in detail previously in this testimony, it is appropriate to rely on multiple cost of common equity models in determining an investor-required return. Since every cost of common equity model has limiting assumptions, considering more relevant data, not less, adds accuracy and reliability to the informed expert judgment needed to determine an appropriate ROE.

Q. Mr. Keller cites that a disadvantage with the CAPM analysis is that its inputs can be easily manipulated.[36] What is your response?

A. All ROE models are only as good as their inputs, and all ROE models can be easily manipulated by changing those inputs. For example, the DCF model has a number of inputs and variations of inputs that can drastically alter results as shown on Table 2:

Table 2: Various Inputs to DCF Models

Input	Variations of Inputs
Cash Flow Stream	Constant-Growth, Blended Growth, Multi-Stage Growth
Dividend Yield	Spot Dividend Yield, average dividend yield
Adjusted Dividend Yield	No adjustment, ½ g adjustment, full g adjustment, projected dividend
Growth Rates	Historical v. Projected v. Sustainable
Growth Measure	EPS, DPS, Book Value Per Share
Sources of Growth Rates	Value Line, Zacks, Yahoo, MorningStar, etc.

35 Keller Direct Testimony, at 26 (Wastewater Testimony).
36 Keller Direct Testimony, at 26 (Wastewater Testimony).

Q. Mr. Keller expresses concerns about the Risk Premium Model not being able to measure the cost of equity directly and is not company-specific, due to the lack of a Beta coefficient. Please respond.

A. Mr. Keller's concerns are misplaced. The PRPM model used in my risk premium model analysis measures the risk-return relationship directly using the same company-specific market prices used to derive company-specific beta coefficients. The authors state:

> The purpose of this paper is to present, test empirically and apply a recently developed general consumption-based asset pricing model that estimates the risk-return relationship directly from asset pricing data and, when estimated with recently developed time-series methods, produces a prediction of the equity risk premium that is driven by its predicted volatility.[37]

In addition, my traditional risk premium analysis does apply beta to the indicated equity risk premium to create a proxy group-specific equity risk premium.[38]

Q. Mr. Keller says that the PRPM was published in 2011.[39] Does that mean that the methodology behind the PRPM was also published in 2011?

A. No. As discussed in my Direct Testimony,[40] the PRPM is based on the research of Robert F. Engle, dating back to the early 1980s. Dr. Engle discovered that the volatility of market prices, returns and risk premiums clusters over time, making prices, returns and risk premiums highly predictable. In 2003, he shared the Nobel Prize in Economics for this work, characterized as "methods of analyzing economic

37 Pauline M. Ahern, Frank J. Hanley, and Richard A. Michelfelder, "A New Approach for Estimating the Equity Risk Premium for Public Utilities", *The Journal of Regulatory Economics*, December 2011, 40:261-278.
38 D'Ascendis Direct Testimony, at 27-28.
39 Keller Direct Testimony, at 31.
40 D'Ascendis Direct Testimony, at 18.

time series with time-varying volatility ("ARCH").[41] Dr. Engle[42] noted that relative to volatility, "the standard tools have become the ARCH / GARCH[43] models." Hence, the methodology is not new.

In addition, the GARCH methodology has been well tested by academia, since Engle's, *et al*. research was originally published in 1982, 39 years ago. I use the well-established GARCH methodology to estimate the PRPM model using a standard commercial and relatively inexpensive statistical package, Eviews,© to develop a means by which to estimate a predicted equity risk premium, and when added to a bond yield, results in a cost of common equity.

The PRPM is also in the public domain, having been published six times in academically peer-reviewed journals: Journal of Economics and Business (June 2011 and April 2015),[44] The Journal of Regulatory Economics (December 2011),[45] The Electricity Journal (May 2013 and March 2020),[46] and Energy Policy (April

41 www.nobelprize.org.

42 Robert Engle, "GARCH 101: The Use of ARCH / GARCH Models in Applied Econometrics", *Journal of Economic Perspectives*, Volume 15, No. 4, Fall 2001, p. 157-168.

43 Autoregressive Conditional Heteroskedasticity / Generalized Autoregressive Conditional Heteroskedasticity.

44 Eugene A. Pilotte and Richard A. Michelfelder, "Treasury Bond Risk and Return, the Implications for the Hedging of Consumption and Lessons for Asset Pricing", *Journal of Economics and Business*, June 2011, 582-604; and Richard A. Michelfelder, "Empirical Analysis of the Generalized Consumption Asset Pricing Model: Estimating the Cost of Capital", *Journal of Economics and Business*, April 2015, 37-50.

45 Pauline M. Ahern, Frank J. Hanley, and Richard A. Michelfelder, "New Approach to Estimating the Equity Risk Premium for Public Utilities", *The Journal of Regulatory Economics*, December 2011, at 40:261-278.

46 Richard A. Michelfelder, Pauline M. Ahern, Dylan W. D'Ascendis, and Frank J. Hanley, "Comparative Evaluation of the Predictive Risk Premium Model, the Discounted Cash Flow Model and the Capital Asset Pricing Model for Estimating the Cost of Common Equity", The Electricity Journal, April 2013, at 84-89; and Richard A. Michelfelder, Pauline M. Ahern, and Dylan W. D'Ascendis, "Decoupling, Risk Impacts and the Cost of Capital", *The Electricity Journal,* January 2020.

2019).[47] Notably, none of these articles have been rebutted in the academic literature.

Finally, the PRPM has also been presented to a number of utility industry/regulatory/academic groups including the following: The Edison Electric Institute Cost of Capital Working Group; The NARUC Staff Subcommittee on Accounting and Finance; The National Association of Electric Companies Finance/Accounting/Taxation and Rates and Regulations Committees; the NARUC Electric Committee; The Wall Street Utility Group; the Indiana Utility Regulatory Commission Cost of Capital Task Force; the Financial Research Institute of the University of Missouri Hot Topic Hotline Webinar; and the Center for Research and Regulated Industries Annual Eastern Conference on two occasions.

Q. Has the PRPM been implicitly accepted by other regulatory commissions?

A. Yes. In Docket No. 2017-292-WS, the Public Service Commission of South Carolina ("PSC SC") accepted Blue Granite Water Company's entire requested ROE, which included the PRPM. The relevant portion states:

> The Commission finds Mr. D'Ascendis' arguments persuasive. He provided more indicia of market returns, by using more analytical methods and proxy group calculations. Mr. D'Ascendis' use of analysts' estimates for his DCF analysis is supported by consensus, as is his use of the arithmetic mean. The Commission also finds that Mr. D'Ascendis' non-price regulated proxy group more accurately reflects the total risk faced [by] price regulated utilities and CWS. Furthermore, there is no dispute that CWS is significantly smaller than its proxy group counterparts, and, therefore, it may present a higher risk. An appropriate ROE for CWS is 10.45% to 10.95%. The Company used an ROE of 10.5% in computing its Application, a

47 Richard A. Michelfelder, Pauline M. Ahern, and Dylan W. D'Ascendis, "Decoupling Impact and Public Utility Conservation Investment", *Energy Policy*, April 2019, 311-319.

> return on the low end of Mr. D'Ascendis' range, and the Commission finds that ROE is supported by the evidence.[48]

It should also be noted that in the above passage the PSC SC also found my Non-Price Regulated Proxy Group to be appropriate.

In addition, in Docket No. W-354, Subs 363, 364 and 365, the State of North Carolina Utilities Commission approved my RPM and CAPM analyses, which used PRPM analyses as presented in this proceeding. The relevant portion of the order states:

> In doing so the Commission finds that the DCF (8.81%), Risk Premium (10.00%) and CAPM (9.29%) model results provided by witness D'Ascendis, as updated to use current rates in D'Ascendis Late-Filed Exhibit No. 1, as well as the risk premium (9.57%) analysis of witness Hinton, are credible, probative, and are entitled to substantial weight as set forth below.[49]

Q. Mr. Keller posits that you use proprietary software to conduct your PRPM.[50] Is that true?

A. No. The GARCH methodology is available in various statistical packages such as EViews®, SAS, RATS, S-Plus and JMulti, which are not cost-prohibitive and provide instructions for using the various statistical methodologies in their software. I provided all parties in these proceedings the backup data to run their own GARCH models. While the software I used in this proceeding costs approximately $1,500 for a single user commercial license,[51] JMulti is a free downloadable software with GARCH estimation applications.

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48 Docket No. 2017-292-WS - Order No. 2018-345, at 14 (May 17, 2018).
49 Docket No. W-354, Sub 363, 364, 365, *Order Granting Partial Rate Increase and Requiring Customer Notice*, at PDF 72 (March 31, 2020).
50 Keller Direct Testimony, at 27 (Wastewater Testimony).
51 http://www.eviews.com/general/prices/prices.html

Q. Mr. Keller states that the selection and use of non-price regulated groups comparable in total risk to the proxy group is speculative and subjective.[52] Please respond.

A. The selection criteria for my Non-Price Regulated Proxy Group were based on ranges of two measures of risk: 1) the unadjusted beta of the proxy group, which measures systematic, or market risk; and 2) the standard error of the regression, which gave rise to those betas, measuring non-systematic or diversifiable risk. Systematic plus non-systematic risk is one definition of total risk.[53] This is agreed upon by Mr. Keller, who states at points in his testimony: "Two types of risk are associated with a stock: (1) firm-specific risk (unsystematic risk); and (2) market risk (systematic risk), which is measured by a firm's beta."[54]

Each company I selected for my Non-Price Regulated Proxy Group was required to have an unadjusted beta (a measure of systematic risk) and a standard error of the regression (a measure of unsystematic risk) within the ranges generated by my proxy group, as explained in pages 35 and 36 of my Direct Testimony and on CUPA Statement No. 5, Schedule DWD-6. Business and financial risks may vary between companies and proxy groups, but if the collective average betas and standard errors of the regression of the group are similar, then the total, or aggregate, non-diversifiable market risks and diversifiable risks are similar, as noted in "Comparable Earnings: New Life for an Old Precept" provided in Schedule DWD-6R. Thus, because the non-price regulated companies are selected based on analyses of market data, they are comparable in total risk (even

52 Keller Direct Testimony, at 34.
53 Business risk plus financial risk is a second definition of total risk.
54 Keller Direct Testimony, at 12.

though individual risks may vary) to my proxy group. This is demonstrated clearly on page 273 of Jack C. Francis' Investments: Analysis and Management (page 3 of Schedule DWD-7R), which shows that total risk can be "partitioned into its systematic and unsystematic components." Essentially, companies that have similar betas and standard errors of regression have similar total investment risk.

Q. Mr. Keller criticizes the use of your Non-Price Regulated Proxy Group because the results of the models applied to the groups are not similar to the results of the same models applied to your Proxy Group.[55] Please respond.

A. The role of regulation when setting rates for a utility company is to simulate a competitive market and the returns that the regulator approves should be commensurate with the rates of return earned by firms with comparable risk. That being said, the ranges of the indicated ROEs produced by the common equity models applied to the Proxy Group and Non-Price Regulated Proxy Group in my ROE update do mostly overlap as shown below:

Table 3: Comparison of Model Results Applied to The D'Ascendis Water and Non-Price Regulated Proxy Groups[56]

	DCF	RPM	CAPM
D'Ascendis Proxy Group	4.82% - 11.50%	10.49% - 15.21%	9.59% - 12.42%
Non-Regulated Group Comparable to Water Group	5.34% - 17.49%	11.21%	9.67% - 11.98%

Given the indicated ranges of results of cost of common equity models applied to the Proxy Group and Non-Price Regulated Proxy Group, the objective of the comparable earnings model, and the adherence to the regulatory compact,

55 Keller Direct Testimony, at 33-34.
56 Note that ROE values two standard deviations outside of the mean for each model are excluded from these ranges.

the results of market models applied to the Non-Price Regulated Proxy Group comparable in total risk to my Proxy Group should be accepted by the Commission.

V. RESPONSE TO OCA WITNESS EASTMAN

Q. Please summarize Mr. Eastman's recommendations.

A. Like Mr. Keller, Mr. Eastman accepts the Company's proposed capital structure and cost of debt. Mr. Eastman's ROE recommendation of 9.34% relies solely on his DCF model results for his ROE recommendation, using the CAPM as a "check on reasonableness."[57]

Q. In addition to the undue weighting of his DCF model results, what are the additional areas of disagreement between you and Mr. Eastman?

A. In addition to disagreeing with the weight given to his DCF model results, I also disagree with 1) his use of current interest rates in his CAPM analysis; 2) his calculation of betas for his CAPM analysis; 3) his consideration of geometric mean returns and expected returns from investment houses in his determination of his market risk premium; and 4) his failure to consider CUPA's small size relative to the proxy group.

A. APPLICATION OF THE CAPM

Q. Please summarize Mr. Eastman's application of the CAPM.

A. Mr. Eastman used a six-month average yield on a 30-year Treasury bond as his risk-free rate, his own calculated betas, and expected market risk premiums from

57 Eastman Direct Testimony, at 4-5.

investment houses for his market risk premium to calculate indicated CAPM and ECAPM cost rates of 7.18% and 7.55%, respectively.[58]

Q. Do you have any general comments regarding Mr. Eastman's application of the CAPM and his indicated results?

A. Yes, I do. While I agree with Mr. Eastman's use of the ECAPM and 30-year Treasury bond yields in the CAPM, his indicated results of 7.18% and 7.55% are far removed from any reasonable measure of the ROE for a utility company. The unreasonableness of the results of Mr. Eastman's CAPM is due to his flawed inputs, which are mentioned briefly above, but will be discussed in detail below.

Q. Why should one use projected measures when determining the cost of capital?

A. One should use projected measures when measuring the cost of common equity because it, as well as ratemaking, is expectational in that it reflects investors' expectations of future capital markets, including an expectation of interest rate levels, as well as future risks. Ratemaking is prospective in that the rates set in this proceeding will be in effect for a period in the future. Even though Mr. Eastman exclusively relies on projected growth rates in his DCF analyses,[59] he fails to apply that logic to selecting an appropriate interest rate in his CAPM.

58 Eastman Direct Testimony, at 8-11.
59 Eastman Direct Testimony, at 5-6.

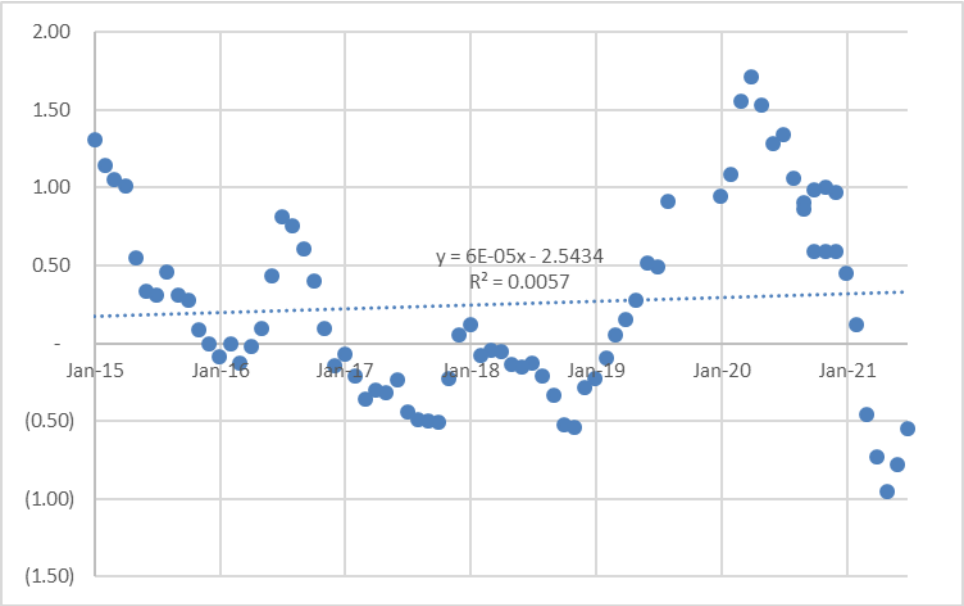
Q. On pages 14 through 16 of his direct testimony, Mr. Eastman criticizes your use of projected yields in the CAPM stating that "projections of yield and interest rates for the past decade have been inaccurate". Please comment.

A. First, as mentioned above, estimating the ROE is a forward-looking process. The critical issue is that the models reflect investors' *expectations,* not what actually happens. That is, the accuracy of the forecasts is less important, assuming the forecast source is a well-known, credible source relied upon by investors (which *Blue Chip* is). By failing to consider projected interest rates, Mr. Eastman has presumed investors do not consider forecasts from reliable sources such as *Blue Chip* in their expectations, without providing any evidence to support that judgment.

Q. Are current interest rates proven to be a better predictor of future interest rates?

A. No, they are not. In Chart 3 (below) I compare actual monthly yields to the three-month yield average from 12 months prior. This chart demonstrates that current Treasury yields have not been accurate predictors of future yields. Those results make intuitive sense. With the recent market dislocation, Treasury yields have decreased significantly and have been volatile. As interest rates decreased, historical Treasury yields over-projected current yields.

Chart 3: Forecast Error of Three-Month Average Treasury Yields[60]



Q. Please comment on Mr. Eastman's beta calculation.

A. Mr. Eastman calculates his beta coefficients using six-month daily prices for his proxy group vs the S&P 500. He then performs an adjustment using the "Bloomberg Method".[61]

Q. Do you agree with Mr. Eastman's calculated Beta coefficients?

A. No, I do not. Mr. Eastman's calculation of beta coefficients is not readily available to investors, and therefore, not relevant to the investor-required return. The importance of using readily available information in an ROE analysis is a key tenet of the EMH, which has been discussed previously. The relevance of the EMH as it relates to Mr. Eastman's calculated beta coefficients is that they are not readily available to investors, and therefore, not considered by them in calculating their required returns. As such, they should be discarded by the Commission in this proceeding.

60 Source: Federal Reserve Schedule H.15.
61 Eastman Direct Testimony, at 11. *See also*, OCA Statement 2, Exhibit NDE-3.

Q. How are Bloomberg Financial Services ("Bloomberg") betas calculated?

A. Bloomberg betas are calculated using weekly returns of a stock relative to the weekly returns of the S&P 500 over a time period of two years.

Q. Are you aware of a widely available published beta that uses daily return data for its calculation of beta?

A. No, I am not.

Q. Are you aware of a widely available published beta that uses a time horizon of six months for its calculation of beta?

A. No, I am not.

Q. What is your conclusion regarding Mr. Eastman's calculated betas?

A. Mr. Eastman's beta calculation is not based on commonly calculated betas in terms of return data (*e.g.,* weekly, monthly) or in terms of time horizon (*e.g.,* two years, five years). This, in addition to Mr. Eastman's calculated betas not being widely available to investors, leads me to conclude that Mr. Eastman's betas provide little value to his CAPM analysis and he should instead use widely published beta values from *Value Line* and Bloomberg.

Q. Please describe Mr. Eastman's determination of the market risk premium component of the CAPM.

A. Mr. Eastman considers investment professionals' expected returns which ranged from 4.10% to 7.20% per year, ultimately selecting an expected market risk premium of 6.50%.[62] Mr. Eastman looks to the long-term historical geometric mean market risk premium from 1928-2020 of 5.00% as a check on his recommended market risk premium.

62 Eastman Direct Testimony, at 10.

Q. Are expected returns by investment houses equivalent to required returns?

A. No, they are not. Expected returns from pension funds or investment houses are not the same as the ROE (otherwise known as required returns). Expected returns from pension funds or investment houses are expecting what the particular utility's earned return will be. For example, a benefit plan asset manager will match the **expected returns** available from various asset classes to the expected liabilities that must be funded. An investor seeking to maximize their risk-adjusted return will only invest in a security if the expected return is equal to or greater than the **required return**. Because expected returns may or may not equal required returns, we should not assume pension funding assumptions (that is, expected returns) may be viewed as a measure of investors' required returns.

Benefit plan managers develop asset allocation and investment decisions based on expected risks and returns for various asset classes, and are subject to the investment objective, or expected timing and nature, of the liabilities being funded by those investments. In the U.S., they must consider: 1) the diversification of the portfolio; 2) the liquidity and current return of the portfolio relative to the expected cash flow requirements under the plan; 3) the portfolio's projected return relative to the plan's funding objective; and 4) the return expected on alternative investments with similar risks.[63] Pension asset managers, therefore, are concerned with investing funds at an expected return to meet expected liabilities.

Widely used finance texts recommend the use of multiple models in estimating the cost of equity, in particular the DCF, CAPM, and risk premium

63 29 CFR 2509.908-1, Interpretive Bulletin Relating to Investing in Economically Targeted Investments, October 17, 2008.

model. To determine whether the use of broad market expected returns for the purposes of pension asset management also is an approach recommended by finance texts, I reviewed articles published in financial journals, as well as additional texts that speak to the methods used by analysts to estimate the cost of equity. An article published in Financial Analysts Journal surveyed financial analysts to determine the analytical techniques that are used in practice.[64] Regarding stock price valuation and cost of capital estimation, the author asked respondents to comment only on the DCF, CAPM, and Economic Value-Added models. Nowhere in that article did the author consider asking whether surveys of expected returns or pension fund assumptions are relevant to the determination of the ROE, the subject of this proceeding.

Q. Is the use of geometric mean risk premiums appropriate for cost of capital purposes?

A. No. Only arithmetic mean return rates are appropriate for cost of capital purposes because *ex-post* (historical) total returns and ERPs differ in size and direction over time, indicating volatility, *i.e.,* variance or risk. The arithmetic mean captures the prospect for variance in returns and ERPs, providing the valuable insight needed by investors in estimating risk in the *future* when making a *current* investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. The geometric mean of ex-post ERPs provides no insight into the potential variance of future returns because the geometric mean relates the change over many time periods to a constant rate of

64 Stanley B. Block, "A Study of Financial Analysts: Practice and Theory", *Financial Analysts Journal*, July/August, 1999.

change, rather than the year-to-year fluctuations, or variance, *critical to risk analysis.* Therefore, the geometric mean is of little to no value to investors seeking to measure risk. Moreover, from a statistical perspective, since stock returns and ERPs are randomly generated, the arithmetic mean is expectational and consistent with the prospective nature of the cost of capital and ratemaking noted above.

The financial literature is quite clear that risk is measured by the variability of expected returns, *i.e.,* the probability distribution of returns.[65] Duff & Phelps 2021 SBBI® Yearbook Stocks, Bonds, Bills and Inflation ("SBBI-2021")[66] explains in detail why the arithmetic mean is the correct mean to use when estimating the cost of capital.

In addition, Weston and Brigham provide the standard financial textbook definition of the riskiness of an asset when they state:

> The riskiness of an asset is defined in terms of the likely variability of future returns from the asset. (emphasis added)[67]

Furthermore, Morin states:

> The geometric mean answers the question of what constant return you would have had to achieve in each year to have your investment growth match the return achieved by the stock market. The arithmetic mean answers the question of what growth rate is the best estimate of the future amount of money that will be produced by continually reinvesting in the stock market. It is the rate of return which, compounded over multiple periods, gives the mean of the probability distribution of ending wealth. (emphasis added)[68]

In addition, Brealey and Myers note:

The proper uses of arithmetic and compound rates of return from

65 Eugene F. Brigham, Fundamentals of Financial Management, (The Dryden Press, 1989), at 639.
66 SBBI-2021, at p. 10-22.
67 J. Fred Weston and Eugene F. Brigham, Essentials of Managerial Finance, 3rd Edition (The Dryden Press, 1974), at 272.
68 Morin, at 133.

> past investments are often misunderstood... Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments... *Moral*: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return. (italics in original)[69]

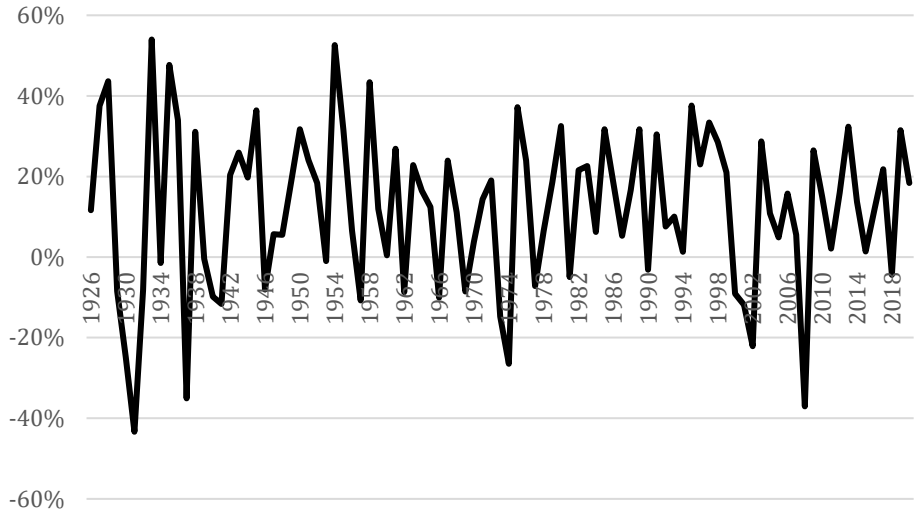
As previously discussed, investors gain insight into relative riskiness by analyzing expected *future* variability. This is accomplished using the arithmetic mean of a random distribution of returns/premiums. Only the arithmetic mean considers all the returns/premiums over a period of time, hence, providing meaningful insight into the variance and standard deviation of those returns/premiums.

Q. Can it be demonstrated that the arithmetic mean takes into account all of the returns and, therefore, is the only appropriate mean to use when estimating the cost of equity?

A. Yes. Pages 1 and 2 of Schedule DWD-8R graphically demonstrate this. Page 1 charts the SBBI-2021 returns on large company stocks for each and every year from 1926 through 2020. It is clear from looking at the year-to-year variation of these returns that stock market returns and, hence, market risk premiums vary (see Chart 4, below).

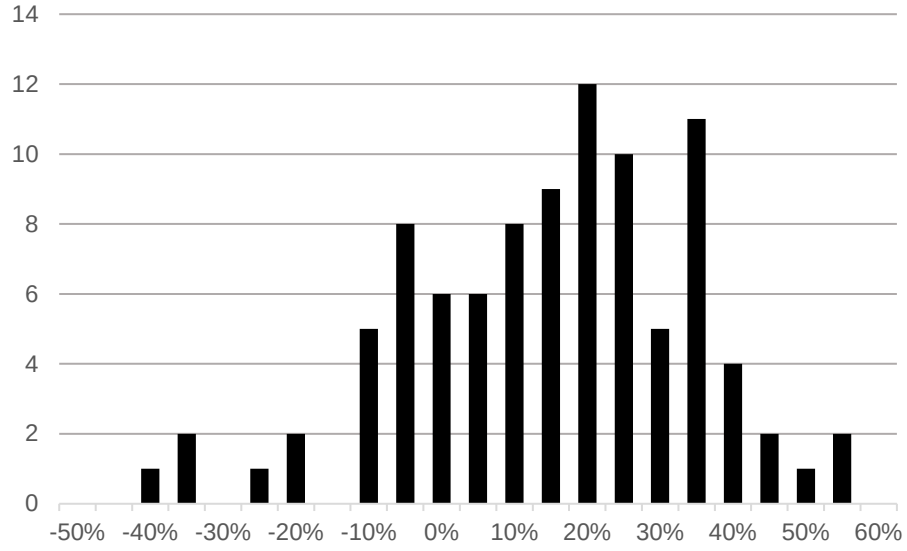
69 Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, 5th Ed. (McGraw-Hill Publications, Inc., 1996), at 146 – 147.

Chart 4: U.S. Large Company Stock Returns 1926-2020[70]



The distribution of each of those returns for the period from 1926 through 2020 is shown in Chart 5 below and on page 2 of Schedule DWD-8R.

Chart 5: Frequency Distribution of Observed Market Returns, 1926 - 2020[71]



There is a clear bell-shaped pattern to the probability distribution of returns, an indication that they are randomly generated and not serially correlated. The

70 SBBI-2021 at Appendix A-1.
71 Schedule DWD-7R, at 2.

arithmetic mean of this distribution of returns considers each and every return in the distribution. In doing so, the arithmetic mean takes into account the standard deviation or likely variance which may be experienced in the future when estimating the rate of return based on such historical returns.

In contrast, the geometric mean considers only two of the returns, the initial and terminal years, which, in this case, are 1926 and 2020. Based on only those two years, a constant rate of return is calculated by the geometric average. That constant return is graphically represented by a flat line, showing no year-to-year variation, for the entire 1926 to 2020 time period. This is obviously unrealistic, based on the histogram shown in Chart 5 above. In view of the foregoing, Mr. Eastman should have exclusively relied on the long-term arithmetic average return on the market in calculating his historical risk premium.

Q. What are your conclusions regarding Mr. Eastman's application of the CAPM?

A. Mr. Eastman's indicated CAPM and ECAPM results of 7.18% and 7.55%, respectively, are unreasonable on their face. Ultimately, Mr. Eastman does not consider the results in his recommendation and I suggest the Commission does the same.

B. <u>FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE</u>

Q. Does Mr. Eastman make a specific adjustment to reflect the smaller size of the Company relative to his proxy group?

A. No, He does not. As discussed previously in this Rebuttal Testimony, the increased risk based on the Company's size relative to the proxy group needs to be reflected in the ROE authorized for CUPA in this proceeding.

C. RESPONSE TO MR. EASTMAN'S CRITICISM OF MY DIRECT TESTIMONY

Q. Does Mr. Eastman have critiques of your Direct Testimony?

A. Yes. Mr. Eastman has the following critiques of my Direct Testimony: 1) that I gave weight to models other than the DCF model in my recommended ROE; 2) that I used forecasted interest rates in my analyses; 3) that I used arithmetic returns in calculating equity risk premiums; and 4) that I considered CUPA's small size relative to my Utility Proxy Group, all of which have been addressed previously in this Rebuttal Testimony.

VI. CONCLUSION

Q. Please summarize your Rebuttal Testimony.

A. In this Rebuttal Testimony, I updated my ROE models with market data as of August 13, 2021. The results of the ROE models produced an indicated range of ROEs from 9.17% to 12.42%. Given the updated results, I maintain my initial recommendation of 10.35%, which, in light of current capital markets, is reasonable, if not conservative.

Regarding the Opposing Witnesses' direct testimonies, I discussed my disagreements with their analyses, which I supported with citations to the academic literature and empirical analyses. I also responded to any critiques to my Direct Testimony, again, supporting my responses with citations to the academic literature and empirical analyses.

Q. Should any or all of the arguments made by the Opposing Witnesses persuade the Commission to lower the ROE it approves for the Company below your recommendation?

A. No, they should not. A weighted average cost of capital of 7.58% and an ROE of 10.35% are both reasonable and conservative. It will provide the Company with sufficient earnings to enable them to attract necessary new capital efficiently and at a reasonable cost, to the benefit of both customers and investors.

Q. Does this conclude your Rebuttal Testimony?

A. Yes.

CUPA Statement No. 5-R

Schedules DWD-1R through DWD-8R

Community Utilities of Pennsylvania, Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at December 31, 2020

Type Of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	(1)	2.64%
Common Equity	47.68%	10.35%	(2)	4.93%
Total	100.00%			7.57%

Notes:

(1) Company-provided.
(2) From page 2 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Six Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	8.17%
2.	Risk Premium Model (RPM) (2)	11.09%
3.	Capital Asset Pricing Model (CAPM) (3)	11.14%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	11.42%
5.	Indicated Range of Common Equity Cost Rates before Adjustment for Unique Risk	8.17% - 11.42%
6.	Business Risk Adjustment (5)	1.00%
7.	Indicated Range of Common Equity Cost Rates after Adjustment	9.17% - 12.42%
8.	Recommended Common Equity Cost Rate	10.35%

Notes:
(1) From page 3 of this Schedule.
(2) From page 10 of this Schedule.
(3) From page 22 of this Schedule.
(4) From page 27 of this Schedule.
(5) Business risk adjustment to reflect CUPA's unique risk compared to the Utility Proxy Group as detailed in Mr. D'Ascendis' Direct Testimony.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Six Water Companies

Proxy Group of Six Water Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Yahoo! Finance Projected Five Year Growth in EPS	[5] Bloomberg Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth in EPS (3)	[7] Adjusted Dividend Yield (4)	[8] Indicated Common Equity Cost Rate (5)
American States Water Company	1.75 %	6.50 %	NA %	5.20 %	6.00 %	5.90 %	1.80 %	7.70 %
American Water Works Company, Inc.	1.48	8.50	8.10	8.60	9.40	8.65	1.54	10.19
California Water Service Group	1.56	6.50	NA	11.70	2.00	6.73	1.61	8.34
Middlesex Water Company	1.20	4.50	NA	2.70	NA	3.60	1.22	4.82
SJW Group	2.07	13.00	NA	7.00	8.00	9.33	2.17	11.50
York Water Company	1.55	6.50	NA	4.90	NA	5.70	1.59	7.29
							Average	8.31 %
							Median	8.02 %
							Average of Mean and Median	8.17 %

NA= Not Available

Notes:

(1) Indicated dividend at 08/13/2021 divided by the average closing price of the last 60 trading days ending 08/13/2021 for each company.
(2) From pages 4 through 9 of this Schedule.
(3) Average of columns 2 through 5 excluding negative growth rates.
(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Company, 1.75% x (1+(1/2 x 5.90%)) = 1.80%.
(5) Column [6] + Column [7].

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 08/13/2021
www.yahoo.com Downloaded on 08/13/2021
Bloomberg Professional Services

AMER. STATES WATER NYSE-AWR

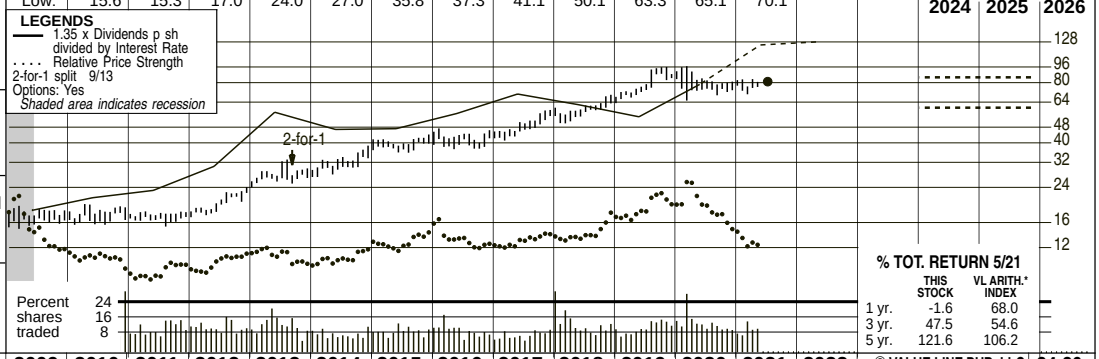
RECENT PRICE 81.01 | P/E RATIO 33.1 (Trailing: 32.8 Median: 24.0) | RELATIVE P/E RATIO 1.61 | DIV'D YLD 1.8% | VALUE LINE

TIMELINESS 3 Raised 3/5/21
SAFETY 2 Raised 7/20/12
TECHNICAL 4 Raised 7/9/21
BETA .65 (1.00 = Market)

High:	19.8	18.2	24.1	33.1	38.7	44.1	47.2	58.4	69.6	96.0	96.6	83.8
Low:	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1	63.3	65.1	70.1

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.35 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 9/13
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$69-$115	$92 (15%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	85	(+5%)	3%
Low	60	(-25%)	-4%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	121	121	120
to Sell	135	142	128
Hld's(000)	25731	25483	25737

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-1.6	68.0
3 yr.	47.5	54.6
5 yr.	121.6	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	13.24	*13.55*	*13.75*	Revenues per sh	*17.20*
1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	3.34	*3.50*	*3.75*	"Cash Flow" per sh	*4.80*
.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	2.33	*2.45*	*2.55*	Earnings per sh A	*3.05*
.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	1.28	*1.40*	*1.52*	Div'd Decl'd per sh B■	*2.00*
2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	3.54	*4.05*	*4.20*	Cap'l Spending per sh	*4.25*
7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	17.39	*17.45*	*20.00*	Book Value per sh D	*23.20*
33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	36.89	*37.25*	*37.50*	Common Shs Outst'g C	*37.50*
21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	34.3	*Bold figures are*		Avg Ann'l P/E Ratio	*24.0*
1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.83	1.78	*Value Line*		Relative P/E Ratio	*1.35*
3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.8%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $569.7 mill. **Due in 5 Yrs** $136.0 mill.
LT Debt $569.3 mill. **LT Interest** $25.2 mill.
(47% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.6 mill.
Pension Assets-12/20 $213.1 mill.
Oblig. $272.8 mill.
Pfd Stock None

Common Stock 36,913,017 shs.
as of 4/30/21

MARKET CAP: $3.0 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
419.3	466.9	472.1	465.8	458.6	436.1	440.6	436.8	473.9	488.2	*505*	*515*	Revenues ($mill)	*645*
42.0	54.1	62.7	61.1	60.5	59.7	69.4	63.9	84.3	86.4	*90.0*	*95.0*	Net Profit ($mill)	*115*
41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	24.6%	*23.5%*	*24.0%*	Income Tax Rate	*23.0%*
2.0%	2.5%	- -	- -	- -	- -	- -	- -	2.5%	- -	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	47.2%	*45.5%*	*48.5%*	Long-Term Debt Ratio	*53.5%*
54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	52.8%	*54.5%*	*51.5%*	Common Equity Ratio	*46.5%*
749.1	787.0	818.4	832.6	791.5	815.3	854.9	938.4	1082.5	1216.2	*1260*	*1390*	Total Capital ($mill)	*1620*
896.5	917.8	981.5	1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	1512.0	*1600*	*1700*	Net Plant ($mill)	*1925*
7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	8.0%	*8.0%*	*8.0%*	Return on Total Cap'l	*8.5%*
10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	*13.5%*	*13.5%*	Return on Shr. Equity	*13.0%*
10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	*13.5%*	*13.5%*	Return on Com Equity	*13.0%*
5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	6.1%	*6.0%*	*5.5%*	Retained to Com Eq	*4.5%*
49%	45%	47%	53%	54%	56%	52%	61%	51%	55%	*57%*	*60%*	All Div'ds to Net Prof	*66%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	1.3	36.7	7.0
Accts Receivable	20.9	29.2	22.0
Other	100.3	91.2	89.9
Current Assets	122.5	157.1	118.9
Accts Payable	55.6	63.8	57.4
Debt Due	5.3	.4	.4
Other	55.1	54.4	55.2
Current Liab.	116.0	118.6	113.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.5%	.5%	*5.0%*
"Cash Flow"	5.5%	3.0%	*7.0%*
Earnings	9.0%	5.5%	*6.5%*
Dividends	8.5%	7.5%	*9.5%*
Book Value	5.5%	5.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.7	134.5	113.0	473.9
2020	109.1	121.3	133.6	124.2	488.2
2021	117.1	*122.9*	*140*	*125*	*505*
2022	*118*	*127*	*143*	*127*	*515*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.29	.44	.62	.37	1.72
2019	.35	.72	.76	.45	2.28
2020	.38	.69	.72	.54	2.33
2021	.52	*.69*	*.74*	*.50*	*2.45*
2022	*.48*	*.72*	*.78*	*.57*	*2.55*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.242	.242	.255	.255	.99
2018	.255	.255	.275	.275	1.06
2019	.275	.275	.305	.305	1.16
2020	.305	.305	.335	.335	1.28
2021	.335	.335			

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 261,976 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,545 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 841. BlackRock, Inc. owns 16.4% of out. shares; Vanguard, 12.0%; off. & dir. 1.0%. (4/21 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water had a strong first quarter. Share earnings of $0.52 were well above our $0.45 estimate and last year's $0.38. The company showed solid growth across the board, as its three main operations posted substantial year-over-year gains. Income increased 38%, 50%, and 17%, respectively, in the Water, Contracted Services, and Electric businesses.

Earnings comparisons will likely be flattish over the remainder of the year, however. Higher rates that went into effect in January are helping, but the fact that many utilities do not perform well in the final year of their previous rate rulings is not unusual. Also, the recent spike in inflation ought to drive up expenses to a greater degree than was anticipated. All told, due mostly to the positive March-interim results, we think American States share net can still improve 5%, to $2.45.

Profits in 2022 depend, to some degree, on a pending rate case. In California, utilities petition state regulators (the CPUC) for rate relief triennially. The utility filed for increased rates for 2022 to 2024 in July of 2020. We would not be surprised if there was a delay in a ruling, as the CPUC may want to see if the recent spike in costs is transitional, or higher prices are more permanent. On the positive side, the CPUC has been relatively reasonable in the recent past, as it understands that significant investment must be made to upgrade the state's water infrastructure. Assuming fair treatment, share earnings should rise 4% next year.

The Construction Services operations could spur future growth. This segment builds and operates water systems on military bases throughout the country. Returns here are generally higher as the market, not regulators, sets the rates. The company has been successful in wining its fair share of bids for the privatization of water operations on military bases. As the program expands, there should be ample opportunities for new business.

These shares are not very attractive at the recent quotation. They carry an average rank for year-ahead performance. Moreover, long-term total return potential is well below the *Value Line* median.

James A. Flood *July 9, 2021*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due early Aug.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 12/31/20; $1.2 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	90

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AMERICAN WATER NYSE-AWK

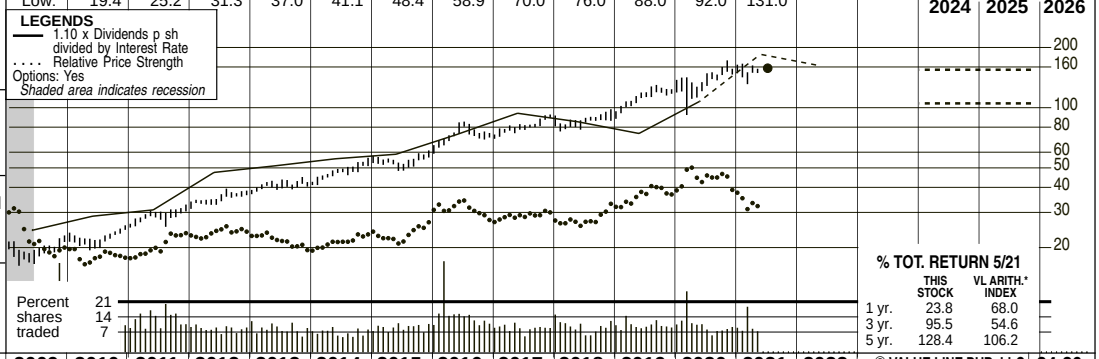
RECENT PRICE **157.33** | P/E RATIO **37.0** (Trailing: 39.7 Median: 24.0) | RELATIVE P/E RATIO **1.80** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 3 Lowered 6/25/21
SAFETY 3 New 7/25/08
TECHNICAL 4 Lowered 6/18/21
BETA .85 (1.00 = Market)

High:	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	98.2	129.9	172.6	166.1	
Low:	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0	88.0	92.0	131.0	

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$112-$258	$185 (20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	155	(Nil)	2%
Low	105	(-35%)	-7%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	401	449	434
to Sell	337	344	388
Hld's(000)	150689	148917	148561

Percent shares traded 21 14 7

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	23.8	68.0
3 yr.	95.5	54.6
5 yr.	128.4	106.2

2005	2006E	2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
- -	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	20.83	*22.10*	*23.30*	Revenues per sh	*25.80*
- -	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	7.24	*7.70*	*8.25*	"Cash Flow" per sh	*9.70*
- -	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	3.43	3.91	*4.25*	*4.60*	Earnings per sh A	*5.50*
- -	- -	- -	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	2.15	*2.36*	*2.57*	Div'd Decl'd per sh B■	*3.10*
- -	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	10.05	*10.80*	*12.60*	Cap'l Spending per sh	*11.75*
- -	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	35.58	*37.95*	*40.20*	Book Value per sh D	*50.00*
- -	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	181.30	*181.50*	*182.00*	Common Shs Outst'g C	*190.00*
- -	- -	- -	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	35.3	*Bold figures are*		Avg Ann'l P/E Ratio	*23.5*
- -	- -	- -	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.75	1.83	*Value Line*		Relative P/E Ratio	*1.30*
- -	- -	- -	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $10751 mil. **Due in 5 Yrs** $2867 mil.
LT Debt $9325 mil. **LT Interest** $384 mil.
(59% of Cap'l)

Leases, Uncapitalized: Annual rentals $13.0 mill.
Pension Assets 12/20 $1990.0 mill
Oblig. $2386.0 mill.
Pfd Stock $3.0 mill. **Pfd Div'd** $.2 mill

Common Stock 181,469,196 shares
as of 4/27/21

MARKET CAP: $28.6 billion (Large Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	3777.0	*4025*	*4240*	Revenues ($mill)	*4900*
304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0	621.0	709.0	*770*	*835*	Net Profit ($mill)	*1045*
39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	23.3%	*22.5%*	*23.5%*	Income Tax Rate	*24.0%*
- -	6.2%	5.1%	- -	- -	- -	- -	- -	5.1%	4.0%	*4.5%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	59.1%	*59.0%*	*61.5%*	Long-Term Debt Ratio	*61.0%*
44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	40.9%	*41.0%*	*39.5%*	Common Equity Ratio	*39.0%*
9580.3	9635.5	9940.7	10364	10911	10967	11875	13433	14760	15787	*16900*	*18700*	Total Capital ($mill)	*20000*
11021	11739	12391	12900	13933	14992	16246	17409	18232	19710	*20750*	*22150*	Net Plant ($mill)	*24500*
4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	5.7%	*5.5%*	*5.5%*	Return on Total Cap'l	*6.0%*
7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	*11.0%*	*11.5%*	Return on Shr. Equity	*11.0%*
7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	*11.0%*	*11.5%*	Return on Com Equity	*11.0%*
3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	5.0%	*5.0%*	*5.5%*	Retained to Com Eq	*4.5%*
52%	57%	40%	50%	50%	56%	68%	56%	57%	55%	*56%*	*56%*	All Div'ds to Net Prof	*56%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	91	576	99
Accts Receivable	294	321	274
Other	900	1009	1093
Current Assets	1285	1906	1466
Accts Payable	203	189	134
Debt Due	814	1611	1426
Other	1028	1081	891
Current Liab.	2045	2881	2451

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	3.5%	*4.5%*
"Cash Flow"	8.0%	7.0%	*6.5%*
Earnings	10.5%	8.0%	*8.5%*
Dividends	11.0%	11.5%	*8.5%*
Book Value	3.5%	4.5%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	761	853	976	850	3440
2019	813	882	1013	902	3610
2020	844	931	1079	923	3777
2021	888	*1002*	*1160*	*975*	*4025*
2022	*935*	*1055*	*1200*	*1050*	*4240*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.59	.91	1.03	.62	3.15
2019	.62	.94	1.33	.54	3.43
2020	.68	.97	1.46	.80	3.91
2021	.73	*1.07*	*1.58*	*.87*	*4.25*
2022	*.80*	*1.15*	*1.70*	*.95*	*4.60*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.375	.415	.415	.415	1.62
2018	.415	.455	.455	.455	1.78
2019	.455	.50	.50	.50	1.96
2020	.50	.55	.55	.55	2.15
2021	.55	.6025			

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to approximately 15 million people in 46 states. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86% of 2020 revenues. New Jersey is its largest market accounting for 24.5% of regulated revenues; Pennsylvania, 22.5%; Missouri, 10.6%. Has 6,800 employees. The Vanguard Grp, owns 11.7% of outstanding shares; BlackRock, Inc., 8.1%; officers & directors, less than 1.0%. (3/21 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works should continue to post solid earnings gains. In the first quarter, its share net rose 7%, on a year-over-year basis. This came despite coronavirus-related costs and the suspension of service disconnections for nonpaying accounts. The utility ought to eventually recover these funds through higher rates, however. In any case, thanks to its acquisition policy (more below), we are maintaining our share-net estimate of $4.25 for 2021, a 9% increase compared to 2020. We look for the bottom line to climb 8% next year, to $4.60, due to an expanding rate base and some rate relief.

The water utility has a straightforward strategy that has proven to be very successful. There are approximately 100,000 small municipally-run water utilities in the United States. Thus, there exists a tremendous amount of inefficiencies in the industry. Expense margins can often be improved substantially when acquisitions are made. American Water Works ought to continue to purchase many smaller water districts. In 2021, there have already been several made, the largest being the York City Sewer Authority for $235 million.

The construction budget remains large. As is the case for almost all water utilities, American Water Works is spending heavily to upgrade its pipeline and wastewater assets. We estimate that the capital budget will average between $2.2 billion to $$2.5 billion annually for the next 10 years.

Finances are sound. Despite the vast building program, the company has managed to maintain a solid balance sheet. Because of reasonable regulatory treatment, it earns a fair return on investments made to modernize its infrastructure. This has been accomplished with very little dilution, as shares outstanding have increased only 3% over the past decade.

These neutrally ranked shares offer below-average long-term total return potential. The stock, which used to have defensive characteristics, has outperformed the key market indexes over the past five years. Hence, the equity is trading above the upper level of our 2024-2026 projected Target Price Range.

James A. Flood *July 9, 2021*

(A) Diluted earnings. Excludes nonrecur. losses: '08, $4.62; '09, $2.63; '11, $0.07. Disc. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due early Aug. **(B)** Dividends paid in March, June, September, and December. ■ Div. reinvestment available. **(C)** In millions. **(D)** Includes intangibles. On 3/31/21: $1.563 billion, $8.61/share. **(E)** Pro forma numbers for '06 & '07.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	90

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CALIFORNIA WATER NYSE-CWT

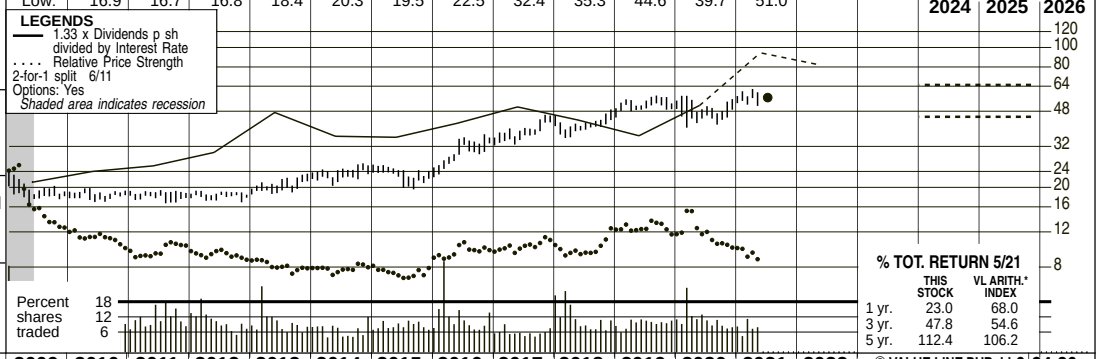
RECENT PRICE 56.22 | P/E RATIO 33.1 (Trailing: 24.4 Median: 24.0) | RELATIVE P/E RATIO 1.61 | DIV'D YLD 1.6% | VALUE LINE

TIMELINESS 3 Lowered 5/28/21
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Lowered 6/25/21
BETA .65 (1.00 = Market)

High:	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	57.4	62.0
Low:	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6	39.7	51.0

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 6/11
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$45-$83	$64 (15%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+15%)	6%
Low	45	(-20%)	-3%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	101	122	112
to Sell	106	91	104
Hld's(000)	36492	37534	38005

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	23.0	68.0
3 yr.	47.8	54.6
5 yr.	112.4	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	14.72	15.78	*15.70*	*15.95*	Revenues per sh	*16.30*
1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	3.14	3.88	*3.25*	*3.55*	"Cash Flow" per sh	*3.75*
.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	1.97	*1.70*	*2.00*	Earnings per sh A	*2.25*
.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	.85	*.92*	*.98*	Div'd Decl'd per sh B ■	*1.15*
2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	5.64	5.93	*5.25*	*5.50*	Cap'l Spending per sh	*5.85*
7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	15.19	16.07	18.30	*18.35*	*18.25*	Book Value per sh C	*19.80*
36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	50.33	*51.00*	*52.00*	Common Shs Outst'g D	*53.00*
24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	39.3	24.9	*Bold figures are*		Avg Ann'l P/E Ratio	*24.0*
1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64	2.09	1.29	*Value Line*		Relative P/E Ratio	*1.30*
3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%	1.5%	1.7%	*estimates*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $1221.1 mill. **Due in 5 Yrs** $357.0 mill.
LT Debt $781.0 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 2.9x) (46% of Cap'l)

Pension Assets-12/20 $716.8 mill. **Oblig.** $833.9 mill.

Pfd Stock None

Common Stock 50,835,000 shs.

MARKET CAP: $2.9 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
501.8	560.0	584.1	597.5	588.4	609.4	666.9	698.2	714.6	794.3	*800*	*830*	Revenues ($mill) E	*865*
36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	63.1	96.8	*87.0*	*105*	Net Profit ($mill)	*120*
40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	11.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	3.3%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	45.9%	*44.5%*	*43.5%*	Long-Term Debt Ratio	*38.0%*
48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	54.1%	*55.5%*	*56.5%*	Common Equity Ratio	*62.0%*
931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	1702.4	*1685*	*1675*	Total Capital ($mill)	*1700*
1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	2650.6	*2675*	*2700*	Net Plant ($mill)	*2850*
5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	7.0%	*6.0%*	*7.0%*	Return on Total Cap'l	*8.0%*
8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	*9.5%*	*11.0%*	Return on Shr. Equity	*11.5%*
8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	*9.5%*	*11.0%*	Return on Com Equity	*11.5%*
2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	6.0%	*4.0%*	*5.5%*	Retained to Com Eq	*5.5%*
71%	62%	56%	55%	71%	68%	51%	55%	60%	43%	*54%*	*49%*	All Div'ds to Net Prof	*51%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	42.7	44.6	84.4
Other	142.0	221.4	218.0
Current Assets	184.7	266.0	302.4
Accts Payable	108.5	131.7	120.5
Debt Due	197.0	375.1	440.1
Other	53.2	81.9	94.9
Current Liab.	358.7	588.7	655.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.5%	4.0%	*1.5%*
"Cash Flow"	6.0%	8.0%	*2.0%*
Earnings	5.0%	8.0%	*6.5%*
Dividends	3.0%	4.0%	*6.5%*
Book Value	5.0%	5.0%	*3.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.)E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	134.6	174.9	221.3	167.4	698.2
2019	126.1	179.0	232.6	176.9	714.6
2020	125.6	175.5	304.1	189.1	794.3
2021	147.7	*200*	*250*	*202.3*	*800*
2022	*160*	*205*	*260*	*205*	*830*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	d.02	.31	.75	.32	1.36
2019	d.16	.35	.88	.24	1.31
2020	d.42	.11	1.94	.31	1.97
2021	d.06	*.40*	*.95*	*.41*	*1.70*
2022	*.10*	*.45*	*1.00*	*.45*	*2.00*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.18	.18	.18	.18	.72
2018	.1875	.1875	.1875	.1875	.75
2019	.1975	.1975	.1975	.1975	.79
2020	.2125	.2125	.2125	.2125	.85
2021	.230	.230			

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 492,600 customers in 100 communities in the state of California. Accounts for about 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '20: residential, 70%; business, 18%; industrial, 4%; public authorities, 5%; other 3%. Off. and dir. own 1% of common stock (4/21 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

California Water is in a much better position after raising its customers' prices associated with its December, 2020 regulatory rate case approval. The March period represented a full quarter of cumulative rate hikes post the regulatory decision. This prompted an 18% year-over-year advance in revenues, to about $148 million. In addition, compared to the previous-year figure, the top-line boost helped the company deliver a slimmer first-quarter share deficit of $0.06, although higher operating expenses kept California Water from turning a profit. For the current year, we now look for earnings of $1.70 a share, down from our previous call of $1.90.

The company's subsidiary, Hawaii Water Service, tabbed another acquisition. Subject to customary closing conditions and approval from the Hawaii Public Utilities Commission, Hawaii Water has agreed to acquire the assets of HOH Utilities Company, a wastewater utility that serves approximately 1,800 residential and resort customers. The deal (financial details were not disclosed) comes on the heels of several notable asset purchases earlier this year. To wit, we envision a consistent stream of bolt-on acquisitions going forward.

Infrastructure upgrades are in full swing, and ought to be par for the course over the pull to mid-decade. As previously noted, management has embarked on a significant multiyear upgrade program to overhaul its aging service pipelines and wastewater treatment facilities. Indeed, future rate case filings are apt to include requests for additional rate hikes to recoup the company's aggressive intermediate- to long-term spending initiatives.

The equity has slipped two spots on our Timeliness Ranking System, to 3 (Average). California Water shares are trading around levels seen three months prior subsequent to etching an all-time high in late April. All told, we suggest near-term subscribers press on the brakes. Moreover, total return potential three to five years hence is nothing to write home about. Thus, investors with an eye to 2024-2026 would also be wise to hold off on making a capital commitment, for now.

Nicholas P. Patrikis *July 9, 2021*

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4¢. Next earnings report due early August.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '20 : $27.6 mill., $0.55/sh.
(D) In millions, adjusted for split.
(E) Excludes non-regulated revenues

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	65

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MIDDLESEX WATER NDQ-MSEX

RECENT PRICE **83.74** | P/E RATIO **38.1** (Trailing: 39.3 Median: 23.0) | RELATIVE P/E RATIO **1.86** | DIV'D YLD **1.3%** | VALUE LINE

TIMELINESS 3 Lowered 6/4/21
SAFETY 2 New 10/21/11
TECHNICAL 4 Raised 7/9/21
BETA .70 (1.00 = Market)

High:	19.3	19.4	19.6	22.5	23.7	28.0	44.5	46.7	60.3	67.7	76.1	88.6
Low:	14.7	16.5	17.5	18.6	19.1	21.2	25.0	32.2	34.0	51.0	48.8	67.1

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.20 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$64-$116	$90 (5%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(-10%)	-1%
Low	55	(-35%)	-8%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	52	67	64
to Sell	69	49	67
Hld's(000)	10357	10675	10712

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	28.5	68.0
3 yr.	102.3	54.6
5 yr.	154.6	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	8.10	*8.45*	*8.70*	Revenues per sh	*9.15*
1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	2.90	3.25	*3.10*	*3.25*	"Cash Flow" per sh	*3.70*
.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	2.18	*2.20*	*2.35*	Earnings per sh A	*2.70*
.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	1.04	*1.10*	*1.15*	Div'd Decl'd per sh B■	*1.35*
2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	5.11	6.04	*5.50*	*5.50*	Cap'l Spending per sh	*6.25*
8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	18.57	19.81	*19.45*	*19.60*	Book Value per sh	*20.85*
11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	17.43	17.47	*17.75*	*17.85*	Common Shs Outst'g C	*18.00*
27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	29.7	30.1	*Bold figures are*		Avg Ann'l P/E Ratio	*24.0*
1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.58	1.56	*Value Line*		Relative P/E Ratio	*1.30*
3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%	1.6%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $279.9 mill. **Due in 5 Yrs** $43.7 mill.
LT Debt $272.7 mill. **LT Interest** $7.5 mill.
(Total interest coverage: 7.3x)
(44% of Cap'l)

Pension Assets-12/20 $88.9 mill.
Oblig. $115.9 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.1 mill.

Common Stock 17,478,000 shs.
as of 4/30/20

MARKET CAP: $1.5 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
102.1	110.4	114.8	117.1	126.0	132.9	130.8	138.1	134.6	141.6	*150*	*155*	Revenues ($mill)	*165*
13.4	14.4	16.6	18.4	20.0	22.7	22.8	32.5	33.9	38.4	*39.0*	*42.0*	Net Profit ($mill)	*49.0*
32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	2.8%	2.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	3.9%	*2.5%*	*2.5%*	AFUDC % to Net Profit	*2.5%*
42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.8%	41.5%	44.0%	*42.5%*	*41.5%*	Long-Term Debt Ratio	*40.0%*
56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	61.6%	58.2%	55.7%	*57.0%*	*58.0%*	Common Equity Ratio	*60.0%*
312.5	316.5	321.4	335.8	345.4	355.4	370.7	404.1	556.7	621.5	*610*	*600*	Total Capital ($mill)	*630*
422.2	435.2	446.5	465.4	481.9	517.8	557.2	618.5	705.7	796.6	*800*	*815*	Net Plant ($mill)	*835*
5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	6.8%	*7.0%*	*7.5%*	Return on Total Cap'l	*8.0%*
7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	11.0%	*11.5%*	*12.0%*	Return on Shr. Equity	*13.0%*
7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	11.1%	*11.5%*	*12.0%*	Return on Com Equity	*13.0%*
1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.8%	7.0%	5.4%	5.8%	*5.5%*	*6.0%*	Retained to Com Eq	*6.5%*
87%	83%	73%	67%	63%	58%	62%	46%	48%	48%	*50%*	*49%*	All Div'ds to Net Prof	*50%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	2.2	4.5	4.4
Other	26.9	29.6	27.0
Current Assets	29.1	34.1	31.4
Accts Payable	23.3	30.4	24.4
Debt Due	27.2	9.3	7.2
Other	14.5	17.1	34.2
Current Liab.	65.0	56.8	65.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.0%	2.0%	*2.0%*
"Cash Flow"	7.5%	10.5%	*3.5%*
Earnings	9.0%	12.5%	*4.5%*
Dividends	3.0%	5.0%	*5.5%*
Book Value	5.5%	8.0%	*2.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	31.2	34.9	38.7	33.3	138.1
2019	30.7	33.4	37.8	32.7	134.6
2020	31.8	35.3	39.9	34.6	141.6
2021	32.5	*37.0*	*44.0*	*36.5*	*150*
2022	*34.0*	*38.0*	*45.0*	*38.0*	*155*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.27	.52	.74	.43	1.96
2019	.39	.49	.66	.46	2.01
2020	.44	.55	.72	.47	2.18
2021	.39	*.55*	*.73*	*.53*	*2.20*
2022	*.47*	*.57*	*.76*	*.55*	*2.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375	.22375	.24	.91
2019	.24	.24	.24	.2562	.98
2020	.2562	.2562	.2562	.2725	1.04
2021	.2725	.2725			

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2020, the Middlesex System accounted for 59% of operating revenues. At 12/31/20, the company had 348 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 2.0% of the com. stock; BlackRock Inst. Trust Co., 7.8% (4/21 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tel.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water delivered mixed results to start 2021. For the March period, revenues of $33 million, which were a slight uptick versus the previous-year figure, came in roughly on par with our expectation. Notably, the advance can be attributed to increased water demand in its New Jersey system, as well as customer growth in its Delaware system. On the other hand, earnings of $0.39 a share missed our mark by $0.06. Higher expenses associated with weather-related water main break activity during the winter months, along with increased labor costs due to wage hikes, weighed on profitability.

We are shaving a nickel off our current-year bottom-line estimate, to $2.20 a share. The downward revision stems mainly from the softer first-quarter showing, as we project relatively flat year-over-year share-profit comparisons until the December period. Looking further out, respectable share-net expansion is likely on tap for 2022.

Solid long-term business prospects are still intact, in our view. Middlesex is poised for moderate year-over-year revenue and earnings expansion over the pull to mid-decade. Indeed, the water utility's operations are largely noncyclical and, thus, ought to perform decently under various operating conditions. Additionally, its customer base should continue to widen (especially in its Delaware system), and residential/commerical water consumption levels may well rise in tandem with a healthier economic backdrop.

Investment appeal is limited at this juncture. The stock established a fresh high-water mark in early June, but has since cooled off a bit. Based on our Timeliness ranking scale, good-quality MSEX shares have been lowered two notches, to 3 (Average), thus no longer stand out for the year ahead. Moreover, its forward-looking 12-month price-to-earnings ratio is significantly stretched compared to historic norms, indicating that investors would need to pay a lofty premium at present to own the water utility. Likewise, subscribers with a three- to five-year investment horizon would be wise to defer commitments until a better entry point is available.

Nicholas P. Patrikis *July 9, 2021*

(A) Diluted earnings. Next earnings report due early August.
(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.
(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	85

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SJW GROUP NYSE-SJW

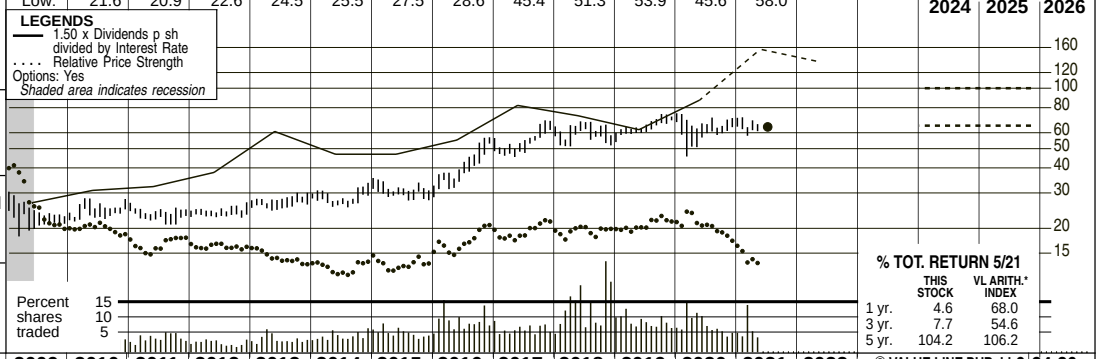
RECENT PRICE 64.13 | P/E RATIO 31.3 (Trailing: 29.8 Median: 21.0) | RELATIVE P/E RATIO 1.53 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 3 New 7/9/21
SAFETY 3 New 4/22/11
TECHNICAL 1 New 7/9/21
BETA .80 (1.00 = Market)

High:	28.2	26.8	26.9	30.1	33.7	35.7	56.9	69.3	68.4	74.5	75.0	71.7
Low:	21.6	20.9	22.6	24.5	25.5	27.5	28.6	45.4	51.3	53.9	45.6	58.0

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$52-$119	$86 (35%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	100	(+55%)	13%
Low	65	(Nil)	3%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	62	80	87
to Sell	77	68	73
Hld's(000)	19827	19850	20963

Percent shares traded 15 10 5

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.6	68.0
3 yr.	7.7	54.6
5 yr.	104.2	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	14.78	19.77	*19.50*	*20.50*	Revenues per sh	*22.15*
2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.67	5.28	*3.70*	*4.30*	"Cash Flow" per sh	*5.30*
1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	1.35	2.14	*2.05*	*2.65*	Earnings per sh A	*3.65*
.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	1.28	*1.36*	*1.44*	Div'd Decl'd per sh B■	*1.72*
2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	7.44	*6.75*	*7.00*	Cap'l Spending per sh	*7.50*
10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	32.12	*35.00*	*36.65*	Book Value per sh	*40.85*
18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	28.56	*30.00*	*30.00*	Common Shs Outst'g C	*30.00*
19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	47.8	30.0	*Bold figures are*		Avg Ann'l P/E Ratio	*23.0*
1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	2.55	1.56	*Value Line*		Relative P/E Ratio	*1.30*
2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	2.0%	*estimates*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $1379.3 mill. **Due in 5 Yrs** $22.4 mill.
LT Debt $1303.0 mill. **LT Interest** $50.0 mill.
(LT Interest Coverage: 3.8x)
(58% of Cap'l)

Pension Assets-12/20 $278.1 mill.
Oblig. $386.1 mill.
Pfd Stock None.
Common Stock 29,790,000 shs.

MARKET CAP: $1.9 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
239.0	261.5	276.9	319.7	305.1	339.7	389.2	397.7	420.5	564.5	*585*	*615*	Revenues ($mill)	*665*
20.9	22.3	23.5	51.8	37.9	52.8	59.2	38.8	38.7	61.5	*62.0*	*80.0*	Net Profit ($mill)	*110*
41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	36.7%	20.6%	25.3%	12.0%	*21.0%*	*21.5%*	Income Tax Rate	*21.0%*
--	--	--	--	--	--	--	--	2.0%	1.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	32.7%	59.1%	58.4%	*53.5%*	*51.0%*	Long-Term Debt Ratio	*38.0%*
43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	41.6%	*46.5%*	*49.0%*	Common Equity Ratio	*62.0%*
607.9	610.2	656.2	744.5	764.6	855.0	894.3	1320.7	2173.6	2204.7	*2250*	*2250*	Total Capital ($mill)	*1975*
756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	1328.8	2206.5	2334.9	*2450*	*2565*	Net Plant ($mill)	*2775*
4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	2.5%	4.0%	*3.5%*	*4.0%*	Return on Total Cap'l	*6.0%*
7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	6.7%	*6.0%*	*7.0%*	Return on Shr. Equity	*9.0%*
7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	6.7%	*6.0%*	*7.0%*	Return on Com Equity	*9.0%*
3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	.5%	2.7%	*2.0%*	*3.5%*	Retained to Com Eq	*4.5%*
61%	59%	62%	29%	42%	31%	36%	60%	88%	59%	*66%*	*54%*	All Div'ds to Net Prof	*47%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	17.9	9.3	14.5
Accts Receivable	36.3	58.1	55.7
Other	67.8	59.9	53.3
Current Assets	122.0	127.3	123.5
Accts Payable	34.9	34.2	25.6
Debt Due	22.3	76.2	76.3
Other	177.4	240.4	187.8
Current Liab.	234.6	350.8	289.7

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	2.0%	*5.5%*
"Cash Flow"	5.5%	2.0%	*4.5%*
Earnings	7.0%	-.5%	*13.0%*
Dividends	6.0%	10.0%	*6.0%*
Book Value	8.5%	12.5%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	75.0	99.1	124.9	98.7	397.7
2019	77.7	103.0	114.0	126.0	420.5
2020	115.8	147.2	165.9	135.6	564.5
2021	114.8	*150*	*175*	*145.2*	*585*
2022	*125*	*155*	*185*	*150*	*615*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.06	.62	.76	.38	1.82
2019	.21	.47	.33	.34	1.35
2020	.08	.69	.91	.46	2.14
2021	.09	*.56*	*.90*	*.50*	*2.05*
2022	*.18*	*.77*	*1.00*	*.70*	*2.65*

Cal-endar	QUARTERLY DIVIDENDS PAID BD■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28	.28	.28	1.12
2019	.30	.30	.30	.30	1.20
2020	.32	.32	.32	.32	1.28
2021	.34	.34			

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with a total population of 450,000 people. Has 361 employees. Officers and directors own 8.3% of outstanding shares (3/21 proxy). Chairman & CEO: Eric Thornburg. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

SJW Group unveiled rather tepid bottom-line guidance for 2021. Management recently forecasted earnings guidance between $1.85 and $2.05 a share, largely due to limited available surface water at its treatment plants as a result of insufficient rainfall. Reflecting on the March period, revenues and earnings were roughly flat on a year-over-year basis, as a slight decline in water consumption and weather-related one-time costs kept a lid on results.

Adding it all up, we are lowering our current-year share-profit forecast. We are shaving $0.50 from our 2021 net income projection, to $2.05 a share. To wit, our revised estimate falls in line with the upper end of leadership's target range. Looking toward 2022, we think earnings are poised to rebound strongly, supported by recently implemented customer rate hikes, as well as improved operating efficiencies.

The company acquired Clear Water Estates' water system in Texas during the period. The deal was valued at around $1 million, and is set to add 230 new service connections and increase the water supply for SJW's Texas operations. Further out, we would not be surprised to see SJW Group explore additional bolt-on acquisitions.

Business prospects out to 2024-2026 are bright, in our view. Residential water consumption ought to markedly accelerate amidst an improving economic backdrop. In addition, commercial water usage is poised to pick up considerably subsequent to the rollback of most of California's COVID-19 restrictions. All in all, the company's noncyclical operations are well positioned for sustainable growth over the long haul.

We are reinstating SJW Group's Timeliness rank at 3 (Average) and, thus expect the stock to be a market performer over the coming six to 12 months. The equity's long-term investment characteristics don't necessarily jump off the page, either. At the recent quotation, SJW shares offer merely average upside three to five years hence. Therefore, we think patient subscribers would be wise to wait for a more attractive entry point.

Nicholas P. Patrikis *July 9, 2021*

(A) Diluted earnings. Excludes nonrecurring losses: '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early August. Quarterly egs. may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions.
(D) Paid special dividend of $0.17 per share on 11/17.
(E) Suspended due to recent CTWS merger.

Company's Financial Strength	B+
Stock's Price Stability	80
Price Growth Persistence	65
Earnings Predictability	50

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YORK WATER NDQ-YORW

RECENT PRICE **46.56** | P/E RATIO **34.5** (Trailing: 37.5 Median: 28.0) | RELATIVE P/E RATIO **1.68** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 3 Lowered 1/15/21
SAFETY 3 Lowered 7/17/15
TECHNICAL 4 Lowered 6/18/21
BETA .85 (1.00 = Market)

High:	18.0	18.1	18.5	22.0	24.3	26.7	39.8	39.9	36.1	47.3	51.3	53.0
Low:	12.8	15.8	16.8	17.6	18.8	19.7	23.8	31.7	27.5	30.3	34.6	40.7

Target Price Range
2024 | 2025 | 2026

18-Month Target Price Range

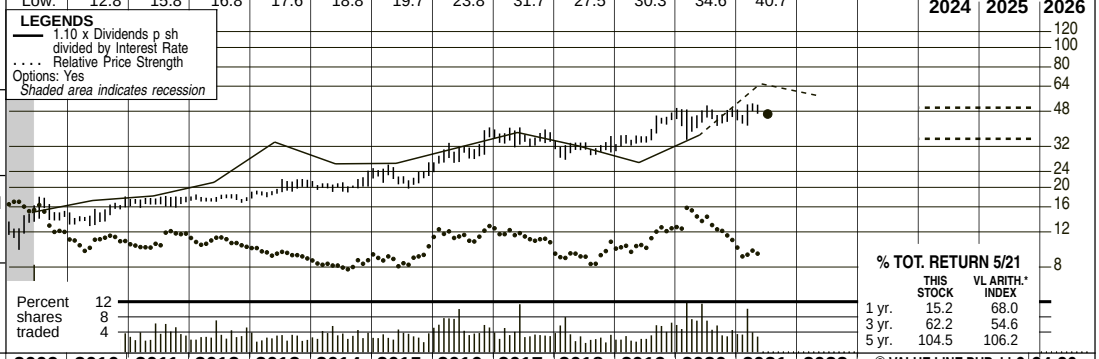
Low-High	Midpoint (% to Mid)
$35-$77	$56 (20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+5%)	4%
Low	35	(-25%)	-5%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	46	56	38
to Sell	53	46	56
Hld's(000)	5302	5341	5518



% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	15.2	68.0
3 yr.	62.2	54.6
5 yr.	104.5	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.74	3.96	4.12	*4.20*	*4.35*	Revenues per sh	*5.10*
.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.58	1.70	1.90	*1.95*	*2.10*	"Cash Flow" per sh	*2.45*
.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.04	1.11	1.27	*1.35*	*1.40*	Earnings per sh A	*1.65*
.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.67	.70	.73	*.78*	*.83*	Div'd Decl'd per sh B	*1.00*
1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	- -	.16	.09	*1.35*	*1.45*	Cap'l Spending per sh	*1.85*
4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	9.75	10.31	10.97	*11.55*	*12.00*	Book Value per sh	*12.90*
10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	12.94	13.02	13.06	*13.00*	*12.90*	Common Shs Outst'g C	*12.80*
26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	30.3	33.8	35.7	*Bold figures are*		Avg Ann'l P/E Ratio	*25.0*
1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.74	1.64	1.80	1.83	*Value Line*		Relative P/E Ratio	*1.40*
2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%	2.1%	1.9%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $122.1 mill. **Due in 5 Yrs** $42.5 mill.
LT Debt $122.1 mill. **LT Interest** $5.5 mill.
(46% of Cap'l)
Pension Assets12/20 $56.3 mill.
Oblig. $54.1 mill.

Pfd Stock None

Common Stock 13,071,733 shs.

MARKET CAP: $600 million (Small Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
40.6	41.4	42.4	45.9	47.1	47.6	48.6	48.4	51.6	53.9	*54.5*	*56.0*	Revenues ($mill)	*65.0*
9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	14.4	16.6	*17.5*	*18.0*	Net Profit ($mill)	*21.0*
35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	15.7%	13.5%	10.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	1.7%	2.5%	3.2%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	42.5%	41.3%	46.3%	*44.5%*	*42.5%*	Long-Term Debt Ratio	*37.5%*
52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.5%	58.7%	53.7%	*55.5%*	*57.5%*	Common Equity Ratio	*62.5%*
180.2	184.8	188.4	189.4	196.3	198.7	209.5	219.5	228.7	266.8	*270*	*270*	Total Capital ($mill)	*265*
233.0	240.3	244.2	253.2	261.4	270.9	288.8	299.2	313.2	343.6	*355*	*370*	Net Plant ($mill)	*405*
6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	7.3%	7.4%	7.1%	*7.5%*	*7.5%*	Return on Total Cap'l	*9.0%*
9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.6%	*11.5%*	*11.5%*	Return on Shr. Equity	*13.0%*
9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.6%	*11.5%*	*11.5%*	Return on Com Equity	*13.0%*
2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	3.8%	4.0%	5.0%	*5.0%*	*4.5%*	Retained to Com Eq	*5.0%*
73%	74%	74%	64%	62%	67%	63%	64%	62%	57%	*58%*	*59%*	All Div'ds to Net Prof	*61%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	- -	5.0	.1
Accounts Receivable	4.4	5.2	4.0
Inventory (Avg. Cost)	1.0	1.0	1.0
Other	4.0	5.1	5.3
Current Assets	9.4	16.3	10.4
Accts Payable	3.4	6.5	6.6
Debt Due	6.5	- -	- -
Other	5.3	5.5	5.8
Current Liab.	15.2	12.0	12.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	2.5%	*4.5%*
"Cash Flow"	6.0%	5.5%	*6.0%*
Earnings	6.0%	5.5%	*6.5%*
Dividends	3.5%	4.0%	*6.0%*
Book Value	4.5%	4.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	11.6	12.0	12.7	12.1	48.4
2019	11.8	13.0	13.7	13.1	51.6
2020	12.9	13.3	14.3	13.4	53.9
2021	13.1	*13.5*	*14.4*	*13.5*	*54.5*
2022	*13.5*	*13.7*	*15.0*	*13.8*	*56.0*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.20	.26	.29	.29	1.04
2019	.22	.28	.35	.26	1.11
2020	.31	.32	.36	.28	1.27
2021	.28	*.35*	*.37*	*.35*	*1.35*
2022	*.30*	*.36*	*.38*	*.36*	*1.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666	.1666	.1733	.673
2019	.1733	.1733	.1733	.1802	.70
2020	.1802	.1802	.1802	.1874	.73
2021	.1874	.1874			

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2020, the company's average daily availability was 35.6 million gallons and its service territory had an estimated population of 202,000. Has more than 72,600 customers. Residential customers accounted for 66% of 2020 revenues; commercial and industrial (26%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 108 full-time employees at 12/31/20. President/Chief Executive Officer: J.T. Hand. Officers/directors own 1.3% of the common stock (3/21 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water reported decent first-quarter results. Revenues of $13.1 million came in roughly on par with our expectation, driven by customer base expansion and increased water usage, particularly in the residential arena. On point, March-period earnings of $0.28 per share matched our estimate. The modest year-over-year decline can be attributed to a nonrecurring life insurance gain in the first quarter of 2020. For the recently ended June period, we look for a noteworthy bottom-line improvement, to $0.35 per share, underpinned by lower taxes due to higher applicable deductions and increased consumer consumption.

Based on management's latest commentary, relatively aggressive capital spending is on tap through the end of 2021. In the first three months of the year, York spent about $7 million on construction expenditures, including infrastructure improvements and replacements. Over the next two quarters, in addition to investments made in the recently ended June period, the company intends to spend upward of $26 million on water main upgrades, the completion of a wastewater treatment plant, software system updates, and pipe and service line repairs. All told, these improvements are vital to support its growing customer base.

The company's operations should prove resilient over the pull to mid-decade. Periodic rate hikes are likely in the cards, as York is apt to recoup a portion of its abovementioned capital investments by raising customer prices. Moreover, as the economic recovery picks up steam, both commercial and residential water usage ought to follow suit. Further customer base expansion is likely, too.

York Water is pegged to mirror the broader market averages over the coming six to 12 months (Timeliness: 3). The stock etched a fresh high-water mark in early June, but has given back most of its gains in recent sessions. To that end, with limited catalysts on the horizon, York shares do not stand out for the year ahead. Moreover, patient subscribers should probably hold off on initiating a position here, as total return potential out to 2024-2026 is unenticing at the current quotation.

Nicholas P. Patrikis *July 9, 2021*

(A) Diluted earnings. Next earnings report due early August.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	80
Price Growth Persistence	70
Earnings Predictability	100

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Community Utilities of Pennsylvania, Inc.
Summary of Risk Premium Models for the
Proxy Group of Six Water Companies

	Proxy Group of Six Water Companies
Predictive Risk Premium Model (PRPM) (1)	11.68 %
Risk Premium Using an Adjusted Total Market Approach (2)	10.49 %
Average	11.09 %

Notes:
(1) From page 11 of this Schedule.
(2) From page 12 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

Proxy Group of Six Water Companies	[1] LT Average Predicted Variance	[2] Spot Predicted Variance	[3] Recommended Variance (2)	[4] GARCH Coefficient	[5] Predicted Risk Premium (3)	[6] Risk-Free Rate (4)	[7] Indicated ROE (5)	
American States Water Company	0.38%	0.32%	0.38%	1.9155	9.02%	2.74%	11.76%	
American Water Works Company, Inc.	0.23%	0.19%	0.23%	6.0313	18.16%	2.74%	20.90%	(6)
California Water Service Group	0.32%	0.25%	0.32%	2.0654	8.17%	2.74%	10.91%	
Middlesex Water Company	0.32%	0.50%	0.32%	2.1852	8.62%	2.74%	11.36%	
SJW Group	0.41%	0.33%	0.41%	1.5616	8.00%	2.74%	10.74%	
York Water Company	0.45%	0.44%	0.45%	2.1712	12.47%	2.74%	15.21%	
						Average	12.00%	
						Median	11.36%	
						Average of Mean and Median	11.68%	

NMF = Not Meaningful Figure

Notes:

(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.

(2) Given current market conditions, I recommend using the long-term average predicted variance.

(3) $(1+(\text{Column [3]} * \text{Column [4]})^{\wedge 12}) - 1$.

(4) From note 2 on page 23 of this Schedule.

(5) Column [5] + Column [6].

(6) Results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six Water Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.48	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.38	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.86	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.04	(3)
5.	Adjusted Prospective Bond Yield	3.90	%
6.	Equity Risk Premium (4)	6.59	
7.	Risk Premium Derived Common Equity Cost Rate	10.49	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 19 and 20 of this Schedule).
(2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.38% from page 13 of this Schedule.
(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 14 of this Schedule. The 0.04% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.25% = 0.04%) as derived from page 13 of this Schedule.
(4) From page 16 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1] Aaa Rated Corporate Bond	[2] A2 Rated Public Utility Bond	[3] Baa2 Rated Public Utility Bond
Jul-2021	2.57 %	2.95 %	3.20 %
Jun-2021	2.79	3.16	3.41
May-2021	2.96	3.33	3.58
Average	2.77 %	3.15 %	3.40 %

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:
0.38 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:
0.25 % (2)

Notes:
(1) Column [2] - Column [1].
(2) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for
Proxy Group of Six Water Companies

	Moody's Long-Term Issuer Rating August 2021		Standard & Poor's Long-Term Issuer Rating August 2021	
Proxy Group of Six Water Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
American States Water Company (2)	A2	6.0	A+	5.0
American Water Works Company Inc (3)	A3	7.0	A	6.0
California Water Service Group (4)	NR	- -	A+	5.0
Middlesex Water Company	NR	- -	A	6.0
SJW Group (5)	NR	- -	A/A-	6.5
York Water Company	NR	- -	A-	7.0
Average	A2/A3	6.5	A	5.9

Notes:

(1) From page 15 of this Schedule.
(2) Ratings that of Golden State Water Company.
(3) Ratings that of New Jersey and Pennsylvania American Water Companies.
(4) Ratings that of California Water Service Company.
(5) Ratings that of San Jose Water Company and The Connecticut Water Company.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Community Utilities of Pennsylvania, Inc.
Judgment of Equity Risk Premium for the
Proxy Group of Six Water Companies

Line No.		Proxy Group of Six Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	7.48 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A2 rated bonds (2)	5.69
3.	Average equity risk premium	6.59 %

Notes: (1) From page 17 of this Schedule.
(2) From page 21 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Six Water Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.79
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.96
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.24
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.56
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.97
7.	Conclusion of Equity Risk Premium	9.24 %
8.	Adjusted Beta (7)	0.81
9.	Forecasted Equity Risk Premium	7.48 %

Notes provided on page 18 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2021 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa2 corporate bonds from 1928-2020.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa2 rated corporate bond yields from 1928-2020 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa2 corporate monthly bond yields, from January 1928 through July 2021.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.48% (from page 12 of this Schedule) from the projected 3-5 year total annual market return of 8.72% (described fully in note 1 on page 23 of this Schedule).

(5) Using data from Value Line for the S&P 500, an expected total return of 15.04% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.48% results in an expected equity risk premium of 11.56%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 17.45% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.48% results in an expected equity risk premium of 13.97%.

(7) Average of mean and median beta from page 22 of this Schedule.

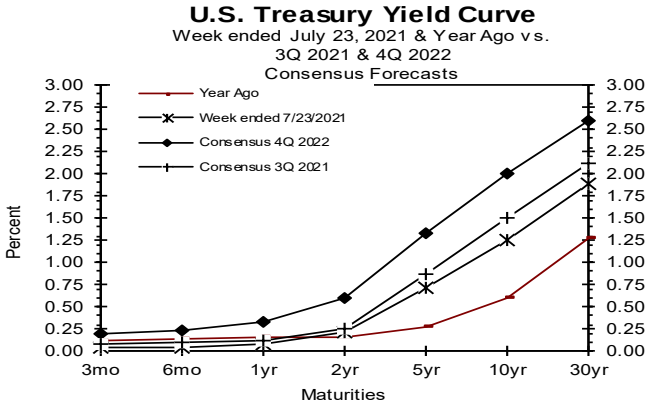
Sources of Information:

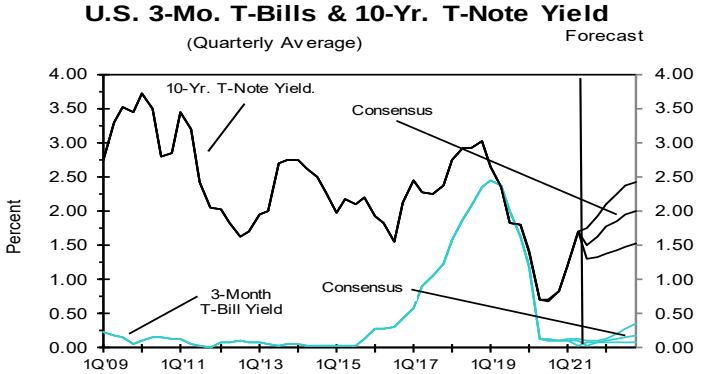
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update
Value Line Summary and Index
Blue Chip Financial Forecasts, August 3, 2021 and June 1, 2021
Bloomberg Professional Services

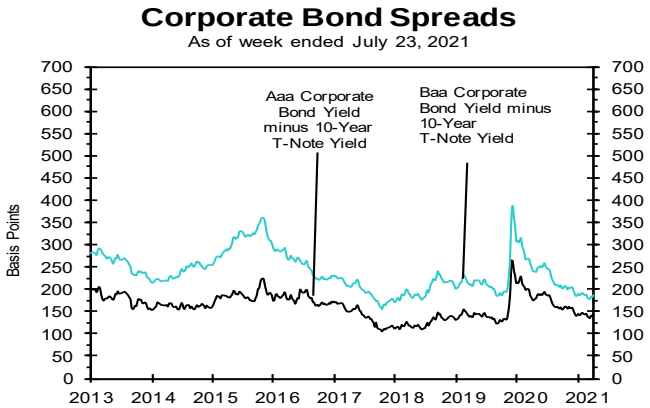
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

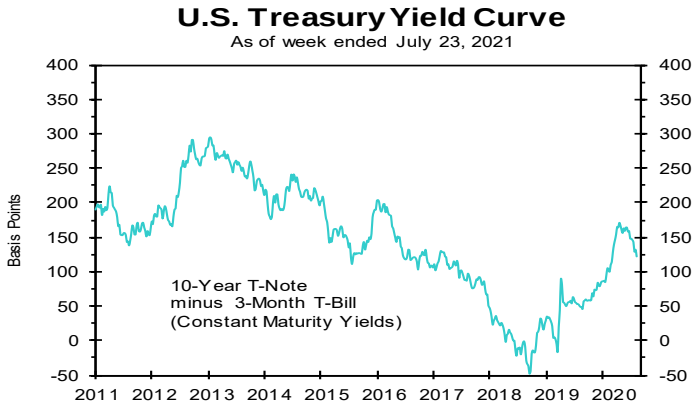
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	3Q	4Q	1Q	2Q	3Q	4Q
Interest Rates	Jul 23	Jul 16	Jul 9	Jul 2	Jun	May	Apr	2Q 2021	2021	2021	2022	2022	2022	2022
Federal Funds Rate	0.10	0.10	0.10	0.10	0.08	0.06	0.07	0.07	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**
LIBOR, 3-mo.	0.13	0.13	0.13	0.14	0.13	0.15	0.18	0.16	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**
Commercial Paper, 1-mo.	0.05	0.06	0.06	0.05	0.04	0.10	0.04	0.06	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 3-mo.	0.05	0.05	0.06	0.05	0.04	0.02	0.02	0.03	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 6-mo.	0.05	0.05	0.06	0.06	0.05	0.04	0.04	0.04	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
Treasury bill, 1 yr.	0.07	0.08	0.08	0.08	0.07	0.05	0.06	0.06	**0.1**	**0.1**	**0.2**	**0.2**	**0.3**	**0.3**
Treasury note, 2 yr.	0.21	0.24	0.22	0.25	0.20	0.16	0.16	0.17	**0.2**	**0.3**	**0.4**	**0.5**	**0.5**	**0.6**
Treasury note, 5 yr.	0.71	0.81	0.78	0.88	0.84	0.82	0.86	0.84	**0.9**	**1.0**	**1.1**	**1.2**	**1.3**	**1.3**
Treasury note, 10 yr.	1.26	1.36	1.34	1.47	1.52	1.62	1.64	1.59	**1.5**	**1.6**	**1.8**	**1.9**	**1.9**	**2.0**
Treasury note, 30 yr.	1.89	1.97	1.96	2.08	2.16	2.32	2.30	2.26	**2.1**	**2.3**	**2.4**	**2.5**	**2.6**	**2.6**
Corporate Aaa bond	2.69	2.74	2.74	2.81	2.91	3.06	3.04	3.00	**2.8**	**3.0**	**3.1**	**3.2**	**3.3**	**3.3**
Corporate Baa bond	3.13	3.19	3.19	3.26	3.35	3.52	3.51	3.46	**3.5**	**3.7**	**3.9**	**4.0**	**4.1**	**4.2**
State & Local bonds	2.59	2.60	2.63	2.66	2.64	2.64	2.66	2.65	**2.4**	**2.5**	**2.6**	**2.6**	**2.7**	**2.7**
Home mortgage rate	2.78	2.88	2.90	2.98	2.98	2.96	3.06	3.00	**3.0**	**3.2**	**3.3**	**3.4**	**3.5**	**3.5**
	History								Consensus Forecasts-Quarterly					
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Key Assumptions	2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022	2022
Fed's AFE $ Index	110.6	110.5	111.4	112.4	107.3	105.2	103.4	102.9	**104.5**	**104.4**	**104.0**	**103.9**	**103.9**	**104.0**
Real GDP	2.8	1.9	-5.1	-31.2	33.8	4.5	6.3	6.5	**7.2**	**5.5**	**4.0**	**3.3**	**2.7**	**2.3**
GDP Price Index	1.4	1.5	1.6	-1.5	3.6	2.2	4.3	6.0	**3.7**	**2.5**	**2.4**	**2.3**	**2.3**	**2.3**
Consumer Price Index	1.3	2.6	1.0	-3.1	4.7	2.4	3.7	8.4	**4.7**	**2.4**	**2.2**	**2.4**	**2.4**	**2.2**
PCE Price Index	1.1	1.7	1.3	-1.6	3.7	1.5	3.8	6.4	**3.7**	**2.2**	**2.1**	**2.3**	**2.2**	**2.2**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, PCE Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).









Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2022 through 2027 and averages for the five-year periods 2023-2027 and 2028-2032. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		---------- Average For The Year ----------						Five-Year Averages	
		2022	2023	2024	2025	2026	2027	2023-2027	2028-2032
1. Federal Funds Rate	CONSENSUS	**0.1**	**0.4**	**1.0**	**1.6**	**1.9**	**2.1**	**1.4**	**2.2**
	Top 10 Average	0.2	0.7	1.6	2.4	2.6	2.7	2.0	2.7
	Bottom 10 Average	0.1	0.1	0.5	0.9	1.3	1.5	0.9	1.6
2. Prime Rate	CONSENSUS	**3.3**	**3.5**	**4.2**	**4.7**	**5.0**	**5.2**	**4.5**	**5.2**
	Top 10 Average	3.4	3.8	4.7	5.4	5.7	5.8	5.1	5.8
	Bottom 10 Average	3.2	3.3	3.7	4.0	4.4	4.6	4.0	4.7
3. LIBOR, 3-Mo.	CONSENSUS	**0.4**	**0.6**	**1.3**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.5	1.0	1.8	2.4	2.7	2.9	2.2	3.0
	Bottom 10 Average	0.2	0.4	0.8	1.2	1.6	1.7	1.1	1.8
4. Commercial Paper, 1-Mo	CONSENSUS	**0.2**	**0.6**	**1.3**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.4	0.9	1.6	2.3	2.6	2.8	2.0	2.8
	Bottom 10 Average	0.1	0.3	0.9	1.3	1.8	1.9	1.2	2.0
5. Treasury Bill Yield, 3-Mo	CONSENSUS	**0.2**	**0.5**	**1.0**	**1.6**	**1.9**	**2.1**	**1.4**	**2.2**
	Top 10 Average	0.3	0.8	1.6	2.2	2.5	2.7	1.9	2.7
	Bottom 10 Average	0.1	0.2	0.6	0.9	1.3	1.5	0.9	1.6
6. Treasury Bill Yield, 6-Mo	CONSENSUS	**0.2**	**0.5**	**1.1**	**1.6**	**2.0**	**2.2**	**1.5**	**2.3**
	Top 10 Average	0.3	0.8	1.7	2.3	2.6	2.7	2.0	2.8
	Bottom 10 Average	0.1	0.3	0.6	1.0	1.4	1.6	1.0	1.7
7. Treasury Bill Yield, 1-Yr	CONSENSUS	**0.3**	**0.7**	**1.2**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.5	1.0	1.8	2.4	2.8	2.9	2.2	3.0
	Bottom 10 Average	0.2	0.3	0.7	1.1	1.5	1.7	1.1	1.8
8. Treasury Note Yield, 2-Yr	CONSENSUS	**0.5**	**0.9**	**1.5**	**2.0**	**2.3**	**2.5**	**1.8**	**2.6**
	Top 10 Average	0.7	1.3	2.1	2.7	3.0	3.1	2.5	3.3
	Bottom 10 Average	0.3	0.5	0.9	1.3	1.6	1.8	1.2	1.9
9. Treasury Note Yield, 5-Yr	CONSENSUS	**1.2**	**1.6**	**2.1**	**2.5**	**2.8**	**2.8**	**2.4**	**3.0**
	Top 10 Average	1.5	2.0	2.8	3.3	3.5	3.5	3.0	3.6
	Bottom 10 Average	0.9	1.2	1.5	1.8	2.0	2.2	1.7	2.3
10. Treasury Note Yield, 10-Yr	CONSENSUS	**2.0**	**2.4**	**2.7**	**3.0**	**3.2**	**3.3**	**2.9**	**3.3**
	Top 10 Average	2.3	2.8	3.4	3.8	4.0	3.9	3.6	4.0
	Bottom 10 Average	1.7	1.9	2.1	2.3	2.5	2.6	2.3	2.7
11. Treasury Bond Yield, 30-Yr	CONSENSUS	**2.6**	**2.9**	**3.3**	**3.6**	**3.8**	**3.8**	**3.5**	**3.9**
	Top 10 Average	3.0	3.5	4.0	4.5	4.6	4.5	4.2	4.6
	Bottom 10 Average	2.3	2.4	2.5	2.7	2.9	3.1	2.7	3.2
12. Corporate Aaa Bond Yield	CONSENSUS	**3.3**	**3.7**	**4.1**	**4.5**	**4.7**	**4.7**	**4.3**	**4.8**
	Top 10 Average	3.6	4.2	4.7	5.2	5.4	5.4	5.0	5.4
	Bottom 10 Average	3.1	3.2	3.4	3.7	3.9	4.1	3.7	4.2
13. Corporate Baa Bond Yield	CONSENSUS	**4.3**	**4.7**	**5.1**	**5.4**	**5.6**	**5.7**	**5.3**	**5.8**
	Top 10 Average	4.6	5.1	5.6	6.1	6.3	6.2	5.9	6.4
	Bottom 10 Average	4.0	4.3	4.5	4.7	4.9	5.2	4.7	5.2
14. State & Local Bonds Yield	CONSENSUS	**2.9**	**3.2**	**3.6**	**3.9**	**4.1**	**4.2**	**3.8**	**4.2**
	Top 10 Average	3.2	3.5	4.1	4.5	4.7	4.7	4.3	4.8
	Bottom 10 Average	2.6	2.9	3.1	3.4	3.7	3.7	3.3	3.8
15. Home Mortgage Rate	CONSENSUS	**3.6**	**4.0**	**4.4**	**4.7**	**4.9**	**5.0**	**4.6**	**5.0**
	Top 10 Average	4.0	4.5	5.0	5.5	5.6	5.6	5.2	5.7
	Bottom 10 Average	3.2	3.6	3.8	4.0	4.2	4.3	4.0	4.4
A. Fed's AFE Nominal $ Index	CONSENSUS	**103.7**	**103.7**	**104.0**	**103.7**	**103.6**	**103.3**	**103.7**	**103.1**
	Top 10 Average	105.3	106.0	106.8	107.0	107.3	107.5	106.9	107.9
	Bottom 10 Average	102.0	101.5	101.4	100.8	100.4	100.0	100.8	99.4
		---------- Year-Over-Year, % Change ----------						Five-Year Averages	
		2022	2023	2024	2025	2026	2027	2023-2027	2028-2032
B. Real GDP	CONSENSUS	**4.2**	**2.6**	**2.3**	**2.2**	**2.1**	**2.1**	**2.2**	**2.1**
	Top 10 Average	5.3	3.3	2.7	2.5	2.4	2.4	2.7	2.5
	Bottom 10 Average	2.9	2.0	1.9	1.8	1.8	1.7	1.8	1.7
C. GDP Chained Price Index	CONSENSUS	**2.3**	**2.3**	**2.2**	**2.1**	**2.2**	**2.1**	**2.2**	**2.1**
	Top 10 Average	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9
D. Consumer Price Index	CONSENSUS	**2.4**	**2.4**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**
	Top 10 Average	2.8	2.7	2.5	2.5	2.5	2.4	2.5	2.4
	Bottom 10 Average	2.1	2.1	1.9	1.9	2.0	1.9	2.0	1.9
E. PCE Price Index	CONSENSUS	**2.3**	**2.2**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
	Top 10 Average	2.7	2.5	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9

Community Utilities of Pennsylvania, Inc.
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.16 %
2.	Regression of Historical Equity Risk Premium (2)	6.45
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.62
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	7.14
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.08
6.	Average Equity Risk Premium (6)	5.69 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2020. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above.
(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - July 2021.
(4) Using data from Value Line for the S&P Utilities Index, an expected return of 11.00% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 12 of this Schedule results in an equity risk premium of 7.14%. (11.00% - 3.86% = 7.14%)
(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 8.94% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 12 of this Schedule results in an equity risk premium of 5.08%. (8.94% - 3.86% = 5.08%)
(6) Average of lines 1 through 5.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Six Water Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Company	0.65	0.62	0.63	10.12 %	2.74 %	9.12 %	10.05 %	9.59 %
American Water Works Company, Inc.	0.85	1.06	0.95	10.12	2.74	12.36	12.48	12.42
California Water Service Group	0.65	0.65	0.65	10.12	2.74	9.32	10.21	9.76
Middlesex Water Company	0.70	0.79	0.74	10.12	2.74	10.23	10.89	10.56
SJW Group	0.80	0.98	0.89	10.12	2.74	11.75	12.03	11.89
York Water Company	0.85	0.97	0.91	10.12	2.74	11.95	12.18	12.07
Mean			0.80			10.79 %	11.31 %	11.05 %
Median			0.82			10.99 %	11.46 %	11.23 %
Average of Mean and Median			0.81			10.89	11.39	11.14 %

Notes on page 23 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2020)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2020:	12.20	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05	
MRP based on Ibbotson Historical Data:	7.15	%

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2020)	9.53	%

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - July 2021)	11.07	%

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending August 13, 2021)

Total projected return on the market 3-5 years hence*:	8.72	%
Projected Risk-Free Rate (see note 2):	2.74	
MRP based on Value Line Summary & Index:	5.98	%

*Forecasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	15.04	%
Projected Risk-Free Rate (see note 2):	2.74	
MRP based on Value Line data	12.30	%

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	17.45	%
Projected Risk-Free Rate (see note 2):	2.74	
MRP based on Bloomberg data	14.71	%
Average of Value Line, Ibbotson, and Bloomberg MRP:	10.12	%

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 19-20 of this Schedule.) The projection of the risk-free rate is illustrated below:

Third Quarter 2021	2.10	%
Fourth Quarter 2021	2.30	
First Quarter 2022	2.40	
Second Quarter 2022	2.50	
Third Quarter 2022	2.60	
Fourth Quarter 2022	2.60	
2023-2027	3.50	
2028-2032	3.90	
	2.74	%

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, August 3, 2021 and June 1, 2021
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group companies were then selected based on the unadjusted beta range of 0.44 – 0.76 and residual standard error of the regression range of 2.9599 – 3.5303 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Water Utility Proxy Group's residual standard error of the regression is 0.1426. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1426 = \frac{3.2451}{\sqrt{518}} = \frac{3.2451}{22.7596}$$

Source of Information: Value Line, Inc., June 2021
Value Line Investment Survey (Standard Edition)

Community Utilities of Pennsylvania, Inc.
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
Proxy Group of Six Water Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
American States Water Company	0.65	0.43	2.4596	0.0614
American Water Works Company, Inc.	0.85	0.77	3.2188	0.0803
California Water Service Group	0.65	0.46	3.1475	0.0785
Middlesex Water Company	0.70	0.53	3.5107	0.0876
SJW Group	0.80	0.69	3.5626	0.0889
York Water Company	0.85	0.70	3.5715	0.0891
Average	0.75	0.60	3.2451	0.0810
Beta Range (+/- 2 std. Devs. of Beta)	0.44	0.76		
2 std. Devs. of Beta	0.16			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.9599	3.5303		
Std. dev. of the Res. Std. Err.	0.1426			
2 std. devs. of the Res. Std. Err.	0.2852			

Source of Information: Valueline Proprietary Database, June 2021

Community Utilities of Pennsylvania, Inc.
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

Proxy Group of Twenty Non-Price Regulated Companies	[1] VL Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Adobe Inc.	0.75	0.58	3.1513	0.0786
Amazon.com	0.70	0.52	3.5000	0.0873
Balchem Corp.	0.75	0.56	3.5202	0.0878
Bio-Rad Labs. 'A'	0.75	0.59	3.3325	0.0831
Bristol-Myers Squibb	0.85	0.75	3.3304	0.0831
C.H. Robinson	0.70	0.53	3.0101	0.0751
CSG Systems Int'l	0.75	0.61	3.1327	0.0782
Citrix Sys.	0.65	0.44	3.4368	0.0857
Dollar General	0.65	0.47	3.1078	0.0775
Lancaster Colony	0.70	0.53	2.9606	0.0739
Lilly (Eli)	0.75	0.58	3.2162	0.0802
Pool Corp.	0.85	0.74	3.2969	0.0823
RLI Corp.	0.80	0.67	3.0423	0.0759
Smucker (J.M.)	0.65	0.44	3.1027	0.0774
Schneider National	0.80	0.65	3.4610	0.0885
Bio-Techne Corp.	0.85	0.74	3.4459	0.0860
Tyler Technologies	0.75	0.56	3.1242	0.0779
United Parcel Serv.	0.80	0.64	3.0134	0.0752
Werner Enterprises	0.75	0.60	3.3130	0.0827
West Pharmac. Svcs.	0.80	0.69	3.2862	0.0820
Average	0.75	0.59	3.2392	0.0809
Proxy Group of Six Water Companies	0.75	0.60	3.2451	0.0810

Source of Information: Valueline Proprietary Database, June 2021

Community Utilities of Pennsylvania, Inc.
Summary of Cost of Equity Models Applied to
Proxy Group of Twenty Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

Principal Methods		Proxy Group of Twenty Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)		12.89 %
Risk Premium Model (RPM) (2)		11.21
Capital Asset Pricing Model (CAPM) (3)		10.76
	Mean	11.62 %
	Median	11.21 %
	Average of Mean and Median	11.42 %

Notes:
(1) From page 28 of this Schedule.
(2) From page 29 of this Schedule.
(3) From page 32 of this Schedule.

Community Utilities of Pennsylvania, Inc.
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Bloomberg Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Adobe Inc.	- %	15.50 %	18.70 %	18.47 %	17.78 %	17.61 %	- %	NA %
Amazon.com	-	30.00	27.50	37.93	28.88	31.08	-	NA
Balchem Corp.	0.44	16.50	NA	24.00	8.20	16.23	0.48	16.71
Bio-Rad Labs. 'A'	-	11.50	NA	17.80	11.75	13.68	-	NA
Bristol-Myers Squibb	2.93	12.50	7.00	7.95	5.53	8.25	3.05	11.30
C.H. Robinson	2.17	8.00	9.00	11.40	13.47	10.47	2.28	12.75
CSG Systems Int'l	2.20	11.00	NA	(5.00)	8.00	9.50	2.30	11.80
Citrix Sys.	1.31	8.50	12.90	11.20	5.20	9.45	1.37	10.82
Dollar General	0.77	10.50	11.30	5.72	10.72	9.56	0.81	10.37
Lancaster Colony	1.55	6.50	NA	3.00	10.00	6.50	1.60	8.10
Lilly (Eli)	1.47	11.00	16.40	14.86	15.56	14.45	1.58	16.03
Pool Corp.	0.70	15.00	NA	17.00	17.00	16.33	0.76	17.09
RLI Corp.	0.95	12.00	NA	9.80	NA	10.90	1.00	11.90
Smucker (J.M.)	3.00	4.00	1.20	2.50	1.55	2.31	3.03	5.34
Schneider National	1.26	10.00	17.90	15.43	20.47	15.95	1.36	17.31
Bio-Techne Corp.	0.28	12.50	21.00	15.00	20.28	17.19	0.30	17.49
Tyler Technologies	-	12.50	NA	10.00	17.90	13.47	-	NA
United Parcel Serv.	1.99	10.50	11.70	16.13	14.01	13.09	2.12	15.21
Werner Enterprises	1.06	9.50	13.10	12.54	13.57	12.18	1.12	13.30
West Pharmac. Svcs.	0.18	17.00	28.40	25.80	20.41	22.90	0.20	23.10 (2)
							Mean	13.03 %
							Median	12.75 %
							Average of Mean and Median	12.89 %

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of August 13, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, Bloomberg, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

(2) DCF results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 08/13/2021
www.yahoo.com Downloaded on 08/13/2021
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Twenty Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.31 %
2.	Adjustment to Reflect Proxy Group Bond Rating (2)	(0.12)
3.	Prospective Bond Yield Applicable to the Non-Price Regulated Proxy Group	4.19
4.	Equity Risk Premium (3)	7.02
5.	Risk Premium Derived Common Equity Cost Rate	11.21 %

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated August 3, 2021 and June 1, 2021 (see pages 19 and 20 of this Schedule). The estimates are detailed below.

Third Quarter 2021	3.50 %
Fourth Quarter 2021	3.70
First Quarter 2022	3.90
Second Quarter 2022	4.00
Third Quarter 2022	4.10
Fourth Quarter 2022	4.20
2023-2027	5.30
2028-2032	5.80
Average	4.31 %

(2) To reflect the Baa1 average rating of the Non-Price Regulated Proxy Group, the prosepctive yield on Baa2 corporate bonds must be adjusted downward by 1/3 of the spread between A2 and Baa2 corporate bond yields as shown below:

	A2 Corp. Bond Yield	Baa2 Corp. Bond Yield	Spread
Jul-2021	2.89 %	3.24 %	0.35 %
Jun-2021	3.10	3.45	0.35
May-2021	3.27	3.62	0.35
	Average yield spread		0.35 %
		1/3 of spread	0.12 %

(3) From page 31 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Twenty Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

	Moody's Long-Term Issuer Rating August 2021		Standard & Poor's Long-Term Issuer Rating August 2021	
Proxy Group of Twenty Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Adobe Inc.	A2	6.0	A+	5.0
Amazon.com	A1	5.0	AA	3.0
Balchem Corp.	NA	--	NA	--
Bio-Rad Labs. 'A'	Baa2	9.0	BBB	9.0
Bristol-Myers Squibb	A2	6.0	A+	5.0
C.H. Robinson	Baa2	9.0	BBB+	8.0
CSG Systems Int'l	NA	--	BB+	11.0
Citrix Sys.	Baa3	10.0	BBB	9.0
Dollar General	Baa2	9.0	BBB	9.0
Lancaster Colony	NA	--	NA	--
Lilly (Eli)	A2	6.0	A+	5.0
Pool Corp.	NA	--	NA	--
RLI Corp.	Baa2	9.0	BBB	9.0
Smucker (J.M.)	Baa2	9.0	BBB	9.0
Schneider National	NA	--	NA	--
Bio-Techne Corp.	NA	--	NA	--
Tyler Technologies	NA	--	NA	--
United Parcel Serv.	A2	6.0	A-	7.0
Werner Enterprises	NA	--	NA	--
West Pharmac. Svcs.	NA	--	NA	--
Average	Baa1	7.6	A-	7.4

Notes:
(1) From page 15 of this Schedule.

Source of Information:
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Twenty Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Twenty Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.79
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.96
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.24
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.56
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.97
7.	Conclusion of Equity Risk Premium	9.24 %
8.	Adjusted Beta (7)	0.76
9.	Forecasted Equity Risk Premium	7.02 %

Notes:

(1) From note 1 of page 18 of this Schedule.
(2) From note 2 of page 18 of this Schedule.
(3) From note 3 of page 18 of this Schedule.
(4) From note 4 of page 18 of this Schedule.
(5) From note 5 of page 18 of this Schedule.
(6) From note 6 of page 18 of this Schedule.
(7) Average of mean and median beta from page 32 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, August 3, 2021 and June 1, 2021
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Adobe Inc.	0.75	0.85	0.80	10.12 %	2.74 %	10.84 %	11.35 %	11.09 %
Amazon.com	0.70	0.69	0.69	10.12	2.74	9.73	10.51	10.12
Balchem Corp.	0.75	0.68	0.71	10.12	2.74	9.93	10.66	10.29
Bio-Rad Labs. 'A'	0.75	0.70	0.73	10.12	2.74	10.13	10.81	10.47
Bristol-Myers Squibb	0.85	0.80	0.82	10.12	2.74	11.04	11.50	11.27
C.H. Robinson	0.70	0.67	0.68	10.12	2.74	9.62	10.43	10.03
CSG Systems Int'l	0.75	0.91	0.83	10.12	2.74	11.14	11.57	11.36
Citrix Sys.	0.65	0.62	0.64	10.12	2.74	9.22	10.13	9.67
Dollar General	0.65	0.68	0.66	10.12	2.74	9.42	10.28	9.85
Lancaster Colony	0.70	0.72	0.71	10.12	2.74	9.93	10.66	10.29
Lilly (Eli)	0.75	0.75	0.75	10.12	2.74	10.33	10.97	10.65
Pool Corp.	0.85	0.95	0.90	10.12	2.74	11.85	12.10	11.98
RLI Corp.	0.80	0.91	0.85	10.12	2.74	11.35	11.72	11.53
Smucker (J.M.)	0.65	0.50	0.58	10.12	2.74	8.61	9.67	9.14 (4)
Schneider National	0.80	0.72	0.76	10.12	2.74	10.43	11.04	10.74
Bio-Techne Corp.	0.85	0.92	0.89	10.12	2.74	11.75	12.03	11.89
Tyler Technologies	0.75	0.76	0.76	10.12	2.74	10.43	11.04	10.74
United Parcel Serv.	0.80	0.84	0.82	10.12	2.74	11.04	11.50	11.27
Werner Enterprises	0.75	0.78	0.76	10.12	2.74	10.43	11.04	10.74
West Pharmac. Svcs.	0.80	0.74	0.77	10.12	2.74	10.54	11.12	10.83
Mean			0.76			10.48 %	11.08 %	10.78 %
Median			0.76			10.43 %	11.04 %	10.74 %
Average of Mean and Median			0.76			10.46 %	11.06 %	10.76 %

Notes:
(1) From note 1 on page 23 of this Schedule.
(2) From note 2 on page 23 of this Schedule.
(3) Average of CAPM and ECAPM cost rates.
(4) DCF results were excluded from the final average and median as they were less than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on August 13, 2021 (1) (millions)	(times larger)	[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	Community Utilities of Pennsylvania, Inc.	$ 45.958		10	5.01%	
2.	Proxy Group of Six Water Companies	$ 7,248.274	157.7 x	3	0.71%	4.30%

	[A] Decile	[B] Market Capitalization of Smallest Company (millions)	[C] Market Capitalization of Largest Company (millions)	[D] Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,025.803	$ 1,966,078.882	-0.22%
	2	13,178.743	28,808.073	0.49%
	3	6,743.361	13,177.828	0.71%
	4	3,861.858	6,710.676	0.75%
	5	2,445.693	3,836.536	1.09%
	6	1,591.865	2,444.745	1.37%
	7	911.586	1,591.765	1.54%
	8	451.955	911.103	1.46%
	9	190.019	451.800	2.29%
Smallest	10	2.194	189.831	5.01%

*From Duff & Phelps Cost of Capital Navigator,
CRSP Size Premia as of 12/31/2020

Notes:

(1) From page 34 of this Schedule.
(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 4.30% in Column [4], Line No. 2 is derived as follows 4.30% = 5.01% - 0.71%.

Community Utilities of Pennsylvania, Inc.
Market Capitalization of Community Utilities of Pennsylvania, Inc. and the
Proxy Group of Six Water Companies

	Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2020 (millions)	[2] Book Value per Share at Fiscal Year End 2020 (1)	[3] Total Common Equity at Fiscal Year End 2020 (millions)	[4] Closing Stock Market Price on August 13, 2021	[5] Market-to-Book Ratio on August 13, 2021 (2)	[6] Market Capitalization on August 13, 2021 (3) (millions)
	Community Utilities of Pennsylvania, Inc.		NA	NA	$ 10.678 (4)	NA		
	Based upon Proxy Group of Six Water Companies						430.4 (5)	$ 45.958 (6)
	Proxy Group of Six Water Companies							
AWR	American States Water Company	NYSE	36.889	$ 17.395	$ 641.673	$ 89.490	514.5 %	$ 3,301.206
AWK	American Water Works Company, Inc.	NYSE	181.298	35.599	6,454.000	178.920	502.6	32,437.926
CWT	California Water Service Group	NYSE	50.334	18.305	921.344	64.430	352.0	3,242.997
MSEX	Middlesex Water Company	NASDAQ	17.473	19.814	346.208	108.860	549.4	1,902.111
SJW	SJW Group	NYSE	28.557	32.117	917.160	68.670	213.8	1,960.982
YORW	York Water Company	NASDAQ	13.061	10.968	143.252	49.340	449.9	644.421
	Average		54.602	$ 22.366	$ 1,570.606	$ 93.285	430.4 %	$ 7,248.274

NA= Not Available

Notes: (1) Column [3] / Column [1].
(2) Column [4] / Column [2].
(3) Column [3] * Column [5].
(4) Company requested rate base multiplied by Company requested equity ratio.
(5) The market-to-book ratio of Community Utilities of Pennsylvania, Inc. on August 13, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Six Water Companies on August 13, 2021 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2020 Annual Forms 10K
Bloomberg Financial Services

Community Utilities of Pennsylvania, Inc.
Demonstration of the Inadequacy of
a DCF Return Rate Related to Book Value
When Market Value is Greater than Book Value

		[A]	[B]	[C]	[D]
		Based on Mr. Keller's Proxy Group		Based on Mr. Eastman's Proxy Group	
Line No.		Market Value	Book Value	Market Value	Book Value
1.	Per Share	$ 73.87 (1)	$ 21.90 (2)	$ 76.68 (1)	$ 21.90 (2)
2.	DCF Cost Rate (3)	9.24%	9.24%	9.34%	9.34%
3.	Return in Dollars (4)	$ 6.826	$ 2.023	$ 7.162	$ 2.045
4.	Dividends (5)	$ 1.411	$ 1.411	$ 1.304	$ 1.304
5.	Growth in Dollars (6)	$ 5.415	$ 0.612	$ 5.858	$ 0.741
6.	Return on Market Value (7)	9.24%	2.74%	9.34%	2.67%
7.	Rate of Growth on Market Value (8)	7.33%	0.83%	7.64%	0.97%

Notes:
(1) Average of market prices for Mr. Keller and Mr. Eastman's proxy group
(2) Average book value dividing total common equity at year-end 2020 by common shares outstanding at year-end 2020 for each proxy group company. Source SNL Financial
(3) Recommended DCF cost rates for each witness.
(4) Line 1 * Line 2.
(5) Dividends are based on Mr. Keller and Mr. Eastman's implied dividend yield.
(6) Line 3 - Line 4.
(7) Line 3 / Line 1.
(8) Line 5 / Line 1.

Community Utilities of Pennsylvania, Inc.
Calculation of Indicated DCF Applied to Book Value Capital Structure
of Mr. Keller's Proxy Group

Un-lever Indicated Market Capital Structure DCF

Ku	=	Ke	-	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	-	(	Ku	-	d	)	P	/	E
Ku	=	9.24%	-	(((	Ku	-	5.05%	)	1	-	21%	)	21.82%	/	78.16%	)	-	(	Ku	-	5.76%	)	0.02%	/	78.16%
Ku	=	9.24%	-	(((	Ku	-	5.05%	)			79.00%	)			27.92%	)	-	(	Ku	-	5.76%	)		0.03%	
Ku	=	9.24%	-	((	79.00%	*	Ku	-			3.9895%	)			27.92%	)	-	(	0.03%	*	Ku	-	0.00%	)	
Ku	=	9.24%	-	(	22.05%	*	Ku	-			1.11%	)			-0.03%		*		Ku	+	0.00%				
Ku	=	9.24%			-22.05%	*	Ku	+			1.11%				-0.03%		*		Ku	+	0.00%				
Ku	=	10.36%			-22.08%	*	Ku																		
122.08%	*	Ku	=		10.36%																				
		Ku	=		**8.48%**																				

Re-lever to Indicated Book Value Capital Structure DCF

Ke	=	Ku	+	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	+	(	Ku	-	d	)	P	/	E
Ke	=	8.48%	+	(((	8.48%	-	5.05%	)	1	-	21%	)	48.11%	/	51.84%	)	+	(	8.48%	-	5.76%	)	0.05%	/	51.84%
Ke	=	8.48%	+	(((			3.43%	)			79%	)			92.82%	)	+	(			2.72%	)		0.09%	
Ke	=	8.48%	+	((	2.71%	)	92.82%	)	+	(	0.00%	)													
Ke	=	8.48%	+	(	2.52%	)	+				0.00%														
		Ke	=		**11.00%**																				

Where:
- Ku = Un-levered (i.e., 100% equity) cost of common equity
- Ke = Market determined cost of common equity
- i = Cost of debt
- t = Income tax rate
- D = Debt ratio
- E = Equity ratio
- d = Cost of preferred stock
- P = Preferred equity ratio

Community Utilities of Pennsylvania, Inc.
Calculation of Indicated DCF Applied to Book Value Capital Structure
of Mr. Eastman's Proxy Group

Un-lever Indicated Market Capital Structure DCF

Ku	=	Ke	-	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	-	(	Ku	-	d	)	P	/	E
Ku	=	9.34%	-	(((	Ku	-	5.05%	)	1	-	21%	)	21.82%	/	78.16%	)	-	(	Ku	-	5.76%	)	0.02%	/	78.16%
Ku	=	9.34%	-	(((	Ku	-	5.05%	)			79.00%	)			27.92%	)	-	(	Ku	-	5.76%	)		0.03%	
Ku	=	9.34%	-	((	79.00%	*	Ku	-			3.9895%	)			27.92%	)	-	(	0.03%	*	Ku	-	0.00%	)	
Ku	=	9.34%	-	(	22.05%	*	Ku	-			1.11%	)			-0.03%		*		Ku	+	0.00%				
Ku	=	9.34%			-22.05%	*	Ku	+			1.11%				-0.03%		*		Ku	+	0.00%				
Ku	=	10.46%			-22.08%	*	Ku																		
122.08%	*	Ku	=		10.46%																				
		Ku	=		**8.56%**																				

Re-lever to Indicated Book Value Capital Structure DCF

Ke	=	Ku	+	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	+	(	Ku	-	d	)	P	/	E
Ke	=	8.56%	+	(((	8.56%	-	5.05%	)	1	-	21%	)	48.11%	/	51.84%	)	+	(	8.56%	-	5.76%	)	0.05%	/	51.84%
Ke	=	8.56%	+	(((			3.51%				79%	)			92.82%	)	+	(			2.80%	)		0.09%	
Ke	=	8.56%	+	((	2.78%	)	92.82%	)	+	(	0.00%	)													
Ke	=	8.56%	+	(	2.58%	)	+				0.00%														
		Ke	=		**11.14%**																				

Where:
- Ku = Un-levered (i.e., 100% equity) cost of common equity
- Ke = Market determined cost of common equity
- i = Cost of debt
- t = Income tax rate
- D = Debt ratio
- E = Equity ratio
- d = Cost of preferred stock
- P = Preferred equity ratio

Community Utilities of Pennsylvania, Inc.
Mr. Keller Corrected Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]
Proxy Group of Six Water Companies	Value Line Adjusted Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Company	0.65	8.81 %	2.88 %	8.60 %	9.37 %	8.98 %
American Water Works Company, Inc.	0.85	8.81	2.88	10.36	10.69	10.52
California Water Service Group	0.65	8.81	2.88	8.60	9.37	8.98
Middlesex Water Company	0.70	8.81	2.88	9.04	9.70	9.37
SJW Group	0.85	8.81	2.88	10.36	10.69	10.52
Essential Utilities	0.95	8.81	2.88	11.24	11.35	11.29
York Water Company	0.80	8.81	2.88	9.92	10.36	10.14
Mean	0.78			9.73 %	10.22 %	9.97 %
Median	0.80			9.92 %	10.36 %	10.14 %
Average of Mean and Median	0.79			9.83	10.29	10.06 %

(1) Market Return From I&E Exhibit No. 2, Schedule 13 minus Column [3]
(2) Includes 2028 - 2032 Forecast; Source: Blue Chip Financial Forecast - June 1, 2021
(3) Average of Column [4] and Column [5]

Community Utilities of Pennsylvania, Inc.
Portfolio Ranks by Size and Risk Premiums over CAPM Results
as Compiled by Duff and Phelps Guide to Cost of Capital

Portfolio Rank by Size	B-1 Market Val. of Equity (in $millions)	RP	B-2 Average Book Val. (in $millions)	RP	B-3 5-yr Net Income (in $millions)	RP	B-4 Market Value of Invested Capital (in $millions)	RP	B-5 Total Assets (in $millions)	RP	B-6 5-yr EBITDA (in $millions)	RP	B-7 Sales (in $millions)	RP	B-8 Average Number of Employees	RP
1	$222,261 and Up	-0.78%	$44,861 and Up	1.22%	$7,190 and Up	0.85%	$258,435 and Up	-0.32%	$121,632 and Up	0.84%	$14,837 and Up	0.95%	$95,905 and Up	1.02%	234,707 and Up	0.67%
2	$67,607 - $222,261	0.50%	$15,985 - $44,861	1.88%	$2,418 - $7,190	1.69%	$85,545 - $258,435	0.77%	$52,712 - $121,632	1.52%	$5,561 - $14,837	1.74%	$33,447 - $95,905	1.85%	92,311 - 234,707	1.57%
3	$42,245 - $67,607	0.96%	$10,286 - $15,985	2.16%	$1,515 - $2,418	1.98%	$54,459 - $85,545	1.19%	$34,307 - $52,712	1.79%	$3,740 - $5,561	2.03%	$20,941 - $33,447	2.25%	62,769 - 92,311	1.92%
4	$29,591 - $42,245	1.30%	$7,504 - $10,286	2.32%	$1,013 - $1,515	2.28%	$39,733 - $54,459	1.47%	$23,000 - $34,307	2.08%	$2,748 - $3,740	2.24%	$16,179 - $20,941	2.43%	47,290 - 62,769	2.16%
5	$21,930 - $29,591	1.57%	$5,725 - $7,504	2.49%	$772 - $1,013	2.47%	$29,472 - $39,733	1.69%	$17,517 - $23,000	2.29%	$2,103 - $2,748	2.43%	$12,750 - $16,179	2.60%	36,723 - 47,290	2.36%
6	$16,592 - $21,930	1.83%	$4,594 - $5,725	2.60%	$613 - $772	2.62%	$21,901 - $29,472	1.97%	$14,200 - $17,517	2.43%	$1,650 - $2,103	2.59%	$10,380 - $12,750	2.75%	28,971 - 36,723	2.55%
7	$12,962 - $16,592	2.06%	$3,718 - $4,594	2.72%	$502 - $613	2.76%	$17,501 - $21,901	2.16%	$11,581 - $14,200	2.57%	$1,315 - $1,650	2.75%	$8,805 - $10,380	2.87%	23,614 - 28,971	2.73%
8	$10,730 - $12,962	2.26%	$3,164 - $3,718	2.82%	$422 - $502	2.87%	$14,263 - $17,501	2.33%	$9,608 - $11,581	2.69%	$1,094 - $1,315	2.88%	$7,598 - $8,805	2.97%	19,619 - 23,614	2.87%
9	$9,185 - $10,730	2.39%	$2,750 - $3,164	2.89%	$355 - $422	2.98%	$11,972 - $14,263	2.49%	$8,067 - $9,608	2.81%	$924 - $1,094	2.98%	$6,502 - $7,598	3.07%	16,645 - 19,619	3.02%
10	$7,763 - $9,185	2.53%	$2,388 - $2,750	2.96%	$305 - $355	3.08%	$10,234 - $11,972	2.61%	$6,901 - $8,067	2.92%	$784 - $924	3.10%	$5,381 - $6,502	3.18%	14,557 - 16,645	3.12%
11	$6,515 - $7,763	2.68%	$2,059 - $2,388	3.04%	$259 - $305	3.17%	$8,619 - $10,234	2.74%	$6,025 - $6,901	3.01%	$675 - $784	3.20%	$4,454 - $5,381	3.32%	12,653 - 14,557	3.23%
12	$5,542 - $6,515	2.84%	$1,769 - $2,059	3.12%	$221 - $259	3.29%	$7,384 - $8,619	2.89%	$5,275 - $6,025	3.09%	$582 - $675	3.30%	$3,801 - $4,454	3.43%	11,017 - 12,653	3.34%
13	$4,806 - $5,542	2.97%	$1,542 - $1,769	3.20%	$189 - $221	3.37%	$6,601 - $7,384	2.99%	$4,495 - $5,275	3.19%	$509 - $582	3.39%	$3,318 - $3,801	3.53%	9,726 - 11,017	3.44%
14	$4,160 - $4,806	3.09%	$1,358 - $1,542	3.27%	$159 - $189	3.49%	$5,895 - $6,601	3.07%	$3,807 - $4,495	3.30%	$450 - $509	3.47%	$2,935 - $3,318	3.62%	8,526 - 9,726	3.54%
15	$3,572 - $4,160	3.22%	$1,204 - $1,358	3.33%	$138 - $159	3.58%	$5,125 - $5,895	3.18%	$3,263 - $3,807	3.40%	$402 - $450	3.55%	$2,571 - $2,935	3.70%	7,367 - 8,526	3.65%
16	$3,052 - $3,572	3.36%	$1,049 - $1,204	3.39%	$120 - $138	3.67%	$4,340 - $5,125	3.30%	$2,788 - $3,263	3.50%	$349 - $402	3.62%	$2,252 - $2,571	3.80%	6,292 - 7,367	3.77%
17	$2,627 - $3,052	3.50%	$899 - $1,049	3.48%	$103 - $120	3.76%	$3,663 - $4,340	3.45%	$2,358 - $2,788	3.61%	$293 - $349	3.73%	$2,005 - $2,252	3.88%	5,374 - 6,292	3.90%
18	$2,238 - $2,627	3.62%	$778 - $899	3.55%	$87 - $103	3.85%	$3,084 - $3,663	3.58%	$2,011 - $2,358	3.72%	$241 - $293	3.85%	$1,786 - $2,005	3.95%	4,623 - 5,374	4.02%
19	$1,859 - $2,238	3.79%	$670 - $778	3.63%	$71 - $87	3.98%	$2,511 - $3,084	3.73%	$1,712 - $2,011	3.82%	$195 - $241	3.99%	$1,554 - $1,786	4.03%	3,913 - 4,623	4.14%
20	$1,527 - $1,859	3.95%	$574 - $670	3.71%	$57 - $71	4.12%	$2,016 - $2,511	3.91%	$1,429 - $1,712	3.93%	$161 - $195	4.12%	$1,296 - $1,554	4.14%	3,231 - 3,913	4.28%
21	$1,243 - $1,527	4.13%	$488 - $574	3.79%	$47 - $57	4.24%	$1,633 - $2,016	4.08%	$1,171 - $1,429	4.05%	$135 - $161	4.24%	$1,046 - $1,296	4.28%	2,608 - 3,231	4.44%
22	$964 - $1,243	4.31%	$401 - $488	3.89%	$36 - $47	4.38%	$1,281 - $1,633	4.25%	$913 - $1,171	4.19%	$106 - $135	4.36%	$853 - $1,046	4.43%	2,007 - 2,608	4.62%
23	$658 - $964	4.59%	$319 - $401	3.99%	$25 - $36	4.56%	$899 - $1,281	4.48%	$646 - $913	4.38%	$76 - $106	4.56%	$648 - $853	4.55%	1,451 - 2,007	4.86%
24	$329 - $658	5.02%	$190 - $319	4.13%	$13 - $25	4.86%	$457 - $899	4.86%	$352 - $646	4.65%	$42 - $76	4.80%	$349 - $648	4.81%	798 - 1,451	5.13%
25	Up To $329	6.05%	Up To $190	4.66%	Up To $13	5.55%	Up To $457	5.79%	Up To $352	5.30%	Up To $42	5.50%	Up To $349	5.56%	Up to 798	5.99%

	B-1 Value	Portfolio Ranking	B-2 Value	Portfolio Ranking	B-3 Value	Portfolio Ranking	B-4 Value	Portfolio Ranking	B-5 Value	Portfolio Ranking	B-6 Value	Portfolio Ranking	B-7 Value	Portfolio Ranking	B-8 Value	Portfolio Ranking
Mr. Keller's and Mr. Eastman's Water Proxy Group	$ 6,986	11	$ 2,015	12	$ 146	15	$ 10,082	11	$ 6,907	10	$ 409	15	$ 1,040	22	1,917	23
Community Utilities of Pennsylvania, Inc.	$ 37	25	$ 11	25	$ 0.3	25	$ 38	25	$ 14	25	$ 1	25	$ 5	25	9	25
Indicated Risk Premium - Water Proxy Group	3.37%		1.54%		1.97%		3.05%		2.38%		1.95%		1.13%		1.13%	

Sources of Information:

Duff & Phelps Risk Premium Size Study Premia as of December 31, 2020.
SNL Financial
SEC Form 10-K
Company financial statements

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Comparable Earnings: New Life for an Old Precept

by
Frank J. Hanley
Pauline M. Ahern

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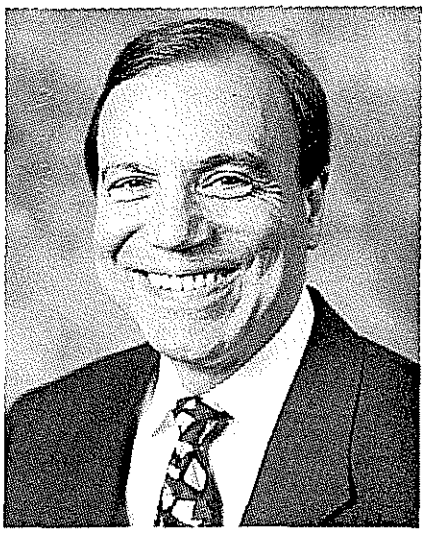
Comparable Earnings: New Life for an Old Precept

Accelerating deregulation has greatly increased the investment risk of natural gas utilities. As a result, the authors believe it more appropriate than ever to employ the comparable earnings model. We believe our application of the model overcomes the greatest traditional objection to it — lack of comparability of the selected non-utility proxy firms. Our illustration focuses on a target gas pipeline company with a beta of 0.96 — almost equal to the market's beta of 1.00.



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Introduction

The comparable earnings model used to determine a common equity cost rate is deeply rooted in the standard of "corresponding risk" enunciated in the landmark *Bluefield* and *Hope* decisions of the U.S. Supreme Court.[1] With such solid grounding in the foundations of rate of return regulation, comparable earnings should be accepted as a principal model, along with the currently popular market-based models, provided that its most common criticism, non-comparability of the proxy companies, is overcome.

Our comparable earnings model overcomes the non-comparability issue of the non-utility firms selected as a proxy for the target utility, in this example, a gas pipeline company. We should note that in the absence of common stock prices for the target utility (as with a wholly-owned subsidiary), it is appropriate to use the average of a proxy group of similar risk gas pipeline companies whose common stocks are actively traded. As we will demonstrate, our selection process results in a group of domestic, non-utility firms that is comparable in total risk, the sum of business and financial risk, which reflects both non-diversifiable systematic, or market, risk as well as diversifiable unsystematic, or firm-specific, risk.

Embedded in the Landmark Decisions

As stated in *Bluefield* in 1922: "A public utility is entitled to such rates as will permit it to earn a return ... on investments in other business undertakings which are attended by corresponding risks and uncertainties ..."

In addition, the court stated in *Hope* in 1944: "By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."

Thus, the "corresponding risk" precept of *Bluefield* and *Hope* predates the use of such market-based cost-of-equity models as the Discounted Cash Flow (DCF) and Capital Asset Pricing (CAPM), which were developed later and are currently popular in rate-base/rate-of-return regulation. Consequently, the comparable earnings model has a longer regulatory and judicial history. However, it has far greater relevance now than ever before in its history because significant deregulation has substantially increased natural gas utilities' investment risk to a level similar to that of non-utility firms. As a result, it is

Comparable Earnings *from page 4*

more important than ever to look to similar-risk non-utility firms for insight into common equity cost rate, especially in view of the deficiencies inherent in the currently popular market-based cost of common equity models, particularly the DCF model.

Despite the fact that the landmark decisions are still regarded as having set the standards for determining a fair rate of return, the comparable earnings model has experienced decreased usage by expert witnesses, as well as less regulatory acceptance over the years. We believe the decline in the popularity of the comparable earnings model, in large measure, is attributable to the difficulty of selecting non-utility proxy firms that regulators will accept as comparable to the target utility. Regulatory acceptance is difficult to gain when the selection process is arbitrary. Our application of the model is objective and consistent with fundamental financial tenets.

Principles of Comparable Earnings

Regulation is a substitute for the competition of the marketplace. Moreover, regulated public utilities compete in the capital markets with all firms, including unregulated non-utilities. The comparable earnings model is based upon the opportunity cost principle; i.e., that the true cost of an investment is the return that could have been earned on the next best available alternative investment of similar risk. Consequently, the comparable earnings model is consistent with regulatory and financial principles, as it is a surrogate for the competition of the marketplace, and investors seek the greatest available rate of return for bearing similar risk.

The selection of comparable firms is the most difficult step in applying the comparable earnings model, as noted by Phillips[2] as well as by Bonbright, Danielsen and Kamerschen.[3] The selection of non-utility proxy firms should result in a sufficiently broad-based group in order to minimize the effect of company-specific aberrations. However, if the selection process is arbitrary, it likely would result in a proxy group that is too broad-based, such as the Standard & Poor's 500 Composite Index or the Value Line Industrial Composite. The use of such groups would require subjective adjustments to the comparable earnings results to reflect risk differences between the group(s) and the target utility, a gas pipeline company in this example.

Authors' Selection Criteria

We base the selection of comparable non-utility firms on market-based, objective, quantitative measures of risk resulting from market prices that subsume investors' assessments of all elements of risk. Thus, our approach is based upon the principle of risk and return; namely, that firms of comparable risk should be expected to earn comparable returns. It is also consistent with the "corresponding risk" standard established in *Bluefield* and *Hope*. We measure total investment risk as the sum of non-diversifiable systematic and diversifiable unsystematic risk. We use the unadjusted beta as a measure of systematic risk and the standard error of the estimate (residual standard error) as a measure of unsystematic risk. Both the unadjusted beta and the residual standard error are derived from a regression of the target utility's security returns relative to the market's returns, which takes the general form:

$$r_{it} = a_i + b_i r_{mt} + e_{it}$$

where:

r_{it} = tth observation of the ith utility's rate of return

r_{mt} = tth observation of the market's rate of return

e_{it} = tth random error term

a_i = constant least-squares regression coefficient

b_i = least-squares regression slope coefficient, the unadjusted beta.

As shown by Francis,[4] the total variation or risk of a firm's return, Var (r_i), comes from two sources:

Var (r_i) = total risk of ith asset

$= \text{var}(a_i + b_i r_m + e)$ substituting $(a_i + b_i r_m + e)$ for r_i

$= \text{var}(b_i r_m) + \text{var}(e)$ since $\text{var}(a_i) = 0$

$= b_i^2 \text{var}(r_m) + \text{var}(e)$ since $\text{var}(b_i r_m) = b_i^2 \text{var}(r_m)$

= systematic + unsystematic risk

Francis[5] also notes: "The term $\sigma^2(r_i|r_m)$ is called the *residual variance around the regression line* in statistical terms or *unsystematic risk* in capital market theory language. $\sigma^2(r_i|r_m) = \ldots = \text{var}(e)$. The residual variance is the squared standard error in regression language, a measure of unsystematic risk." Application of these criteria results in a group of non-utility firms whose average total investment risk is indeed comparable to that of the target gas pipeline.

As a measure of systematic risk, we use the Value Line unadjusted beta. Beta measures the extent to which market-wide or macro-economic events affect a firm's stock price. We use the unadjusted beta of the target utility as a starting point because it results from the regression of the target utility's security returns relative to the market's returns. Thus, the resulting standard deviation of beta relates to the unadjusted beta. We use the standard deviation of the unadjusted beta to determine the range around it as the selection criterion based on systematic risk.

We use the residual standard error of the regression as a measure of unsystematic risk. The residual standard error reflects the extent to which events specific to the firm's operations affect a firm's stock price. Thus, it is a measure of diversifiable, unsystematic, firm-specific risk.

An Illustration of Authors' Approach

Step One: We begin our approach by establishing the selection criteria as a range of both unadjusted beta and residual standard error of the target gas

continued on page 6

Comparable Earnings *from page 5*

pipeline company.

As shown in table 1, our target gas pipeline company has a Value Line unadjusted beta of 0.90, whose standard deviation is 0.1250. The selection criterion range of unadjusted beta is the unadjusted beta plus (+) and minus (-) three of its standard deviations. By using three standard deviations, 99.73 percent of the comparable unadjusted betas is captured.

Three standard deviations of the target utility's unadjusted beta equals 0.38 (0.1250 x 3 = 0.3750, rounded to 0.38). Consequently, the range of unadjusted betas to be used as a selection criteria is 0.52 - 1.28 (0.52 = 0.90 - 0.38) and (1.28 = 0.90 + 0.38).

Likewise, the selection criterion range of residual standard error equals the residual standard error plus (+) and minus (-) three of its standard deviations. The standard deviation of the residual standard error is defined as: $\sigma/\sqrt{2N}$.

As also shown in table 1, the target gas pipeline company has a residual standard error of 3.7867. According to the above formula, the standard deviation of the residual standard error would be 0.1664 ($0.1664 = 3.7867/\sqrt{2(259)} = 3.7867/22.7596$, where 259 = N, the number of weekly price change observations over a period of five years). Three standard deviations of the target utility's residual standard error would be 0.4992 (0.1664 x 3 = .4992). Consequently, the range of residual standard errors to be used as a selection criterion is 3.2875 - 4.2859 (3.2875 = 3.7867 - 0.4992) and (4.2859 = 3.7867 + 0.4992).

Step Two: The step one criteria are applied to Value Line's data base of nearly 4,000 firms for which Value Line derives unadjusted betas and residual standard errors on a weekly basis. All firms with unadjusted betas and residual standard errors within the criteria ranges are then selected.

Step Three: In the regulatory ratemaking environment, authorized common equity return rates are applied to a book-value rate base. Thus, the earnings rates on book common equity, or net worth, of competitive, non-utility firms are highly relevant provided those firms are indeed comparable in total risk to the target gas pipeline. The use of the return rates of other utilities has no relevance because their allowed, and hence subsequently achieved, earnings rates are dependent upon the regulatory

table 1

Summary of the Comparable Earnings Analysis for the Proxy Group of 248 Non-Utility Companies Comparable in Total Risk to the Target Gas Pipeline Company[1]

	1	2	3	4	5	6	7	8
				rate of return on net worth				
	adj. beta	unadj. beta	residual standard error	3-year average[2]	4-year average[2]	5-year average[2]	5-year projected[3]	
average for the proxy group of 248 non-utility companies comparable in total risk to the target gas pipeline company	0.97	0.92	3.7705					
target gas pipeline company	0.96	0.90[4]	3.7867					
median				11.7%	12.0%	12.6%	15.5%	
average of the median historical returns					12.1%			
conclusion[5]								13.8%

[1]The criteria for selection of the non-utility group was that the non-utility companies be domestic and included in *Value Line Investment Survey*. The non-utility group was selected based on an unadjusted beta range of 0.52 to 1.28 and a residual standard error range of 3.2875 to 4.2859.
[2]Ending 1992.
[3]1996-1998/1997-1999.
[4]The average standard deviation of the target gas pipeline company's unadjusted beta is 0.1250.
[5]Equal weight given to both the average of the 3-, 4- and 5-year historical medians (12.1%) and 5-year projected median rate of return on net worth (15.5%). Thus, 13.8% = (12.1% + 15.5% / 2).
Source: Value Line Inc., March 15, 1994
Value Line Investment Survey

Comparable Earnings *from page 6*

process. Consequently, we believe all utilities must be eliminated to avoid circularity. Moreover, we believe non-domestic firms must be eliminated because their reporting methods differ significantly from U.S. firms.

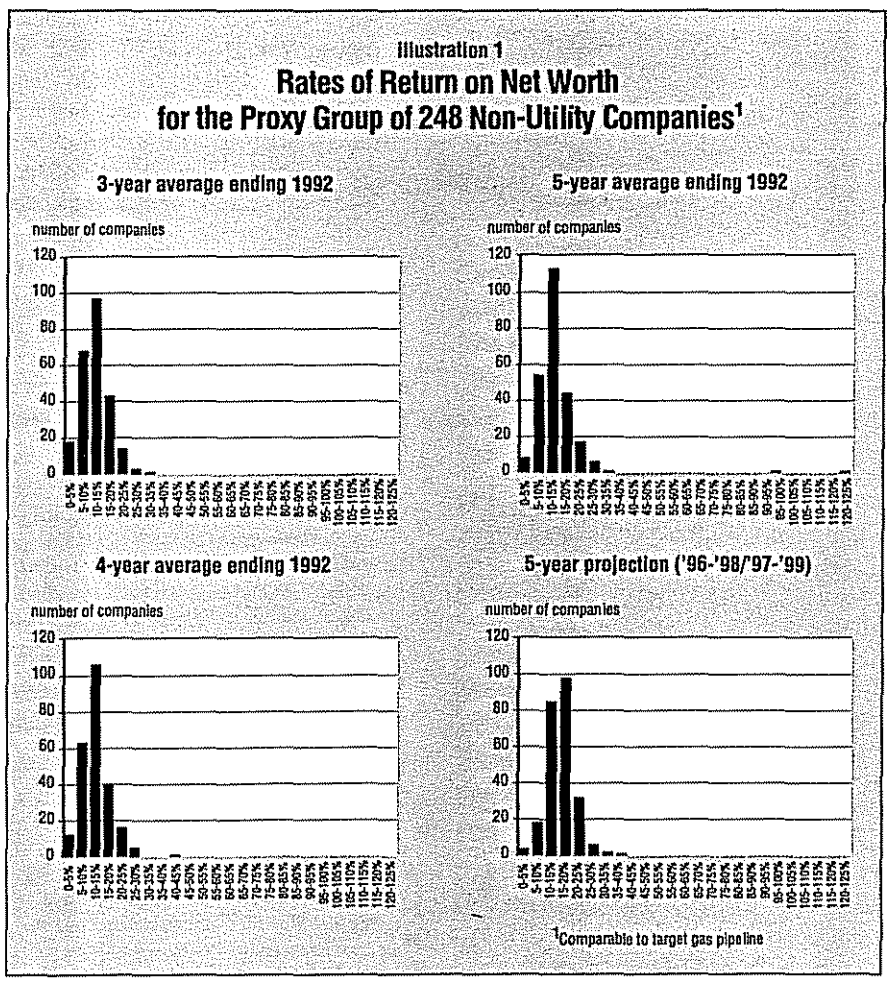
Step Four: We then eliminated those firms for which Value Line does not publish a "Ratings & Report" in *Value Line Investment Survey* so that the historical and projected returns on net worth[6] are from a consistent source. We use historical returns on net worth for the most recent five years, as well as those projected three to five years into the future. We believe it is logical to evaluate both historical and projected return rates because it is reasonable to assume that investors avail themselves of both when they are available from widely disseminated information services, such as Value Line Inc. The use of Value Line's return rates on net worth understates the common equity return rates for two reasons. First, preferred stock is included in net worth. Second, the net worth return rates are as of the end of each period. Thus, the use of average common equity return rates would yield higher results.

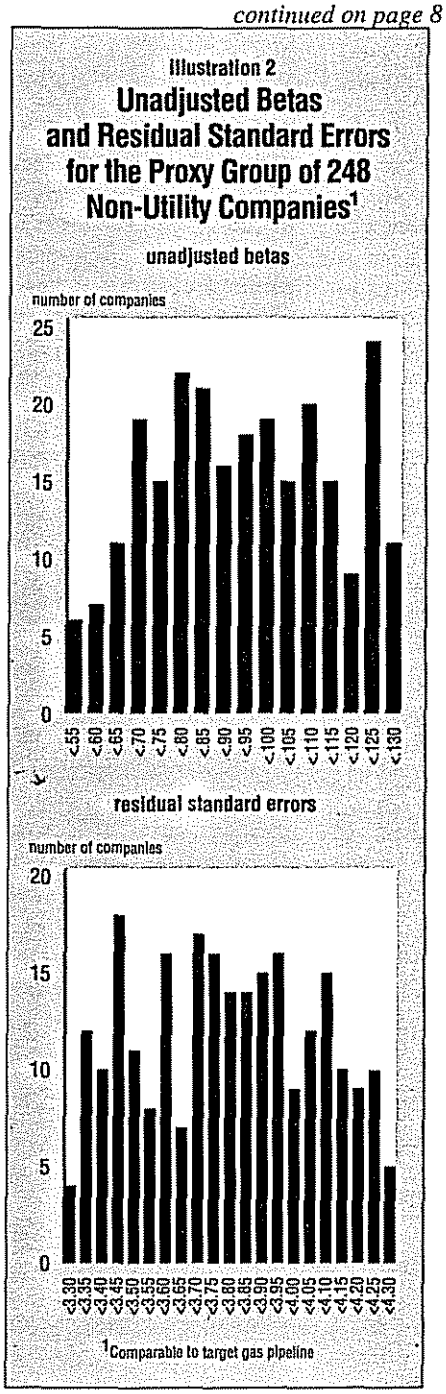
Step Five: Median returns based on the historical average three, four and five years ending 1992 and projected 1996-1998 or 1997-1999 rates of return on net worth are then determined as shown in columns 4 through 7 of table 1. The median is used due to the wide variations and skewness in rates of return on net worth for the non-utility firms as evidenced by the frequency distributions of those returns as shown in illustration 1.

However, we show the average unadjusted beta, 0.92, and residual standard error, 3.7705, for the proxy group in columns 2 and 3 of table 1 because their frequency distributions are not significantly skewed, as shown in illustration 2.

Step Six: Our conclusion of a com-

continued on page 8





Comparable Earnings *from page 7*

parable earnings cost rate is based upon the mid-point of the average of the median three-, four- and five-year historical rates of return on net worth of 12.1 percent as shown in column 5 and the median projected 1996-1998/1997-1999 rate of return on net worth of 15.5 percent as shown in column 7 of table 1. As shown in column 8, it is 13.8 percent.

Summary

Our comparable earnings approach demonstrates that it is possible to select a proxy group of non-utility firms that is comparable in total risk to a target utility. In our example, the 13.8 percent comparable earnings cost rate is very conservative as it is an expected achieved rate on book common equity (a regulatory allowed rate should be greater) and because it is based on end-of-period net worth. A similar rate on average net worth would be about 20 to 40 basis points higher (i.e., 14.0 to 14.2 percent) and still understate the appropriate regulatory allowed rate of return on book common equity.

Our selection criteria are based upon measures of systematic and unsystematic risk, specifically unadjusted beta and residual standard error. They provide the basis for the objective selection of comparable non-utility firms. Our selection criteria rely on changes in market prices over approximately five years. We compare the aggregate total risk, or the sum of systematic and unsystematic risk, which reflects investors' aggregate assessment of both business and financial risk. Thus, no adjustments are necessary to the proxy group results to compensate for the differences in business risk and financial risk, such as accounting practices and debt/equity ratios. Moreover, it is inappropriate to attempt a comparison of the target utility with any individual firm, or subset of firms, in the proxy group because only the average firm of the group is relevant.

Because the comparable earnings model is firmly anchored in the "corresponding risk" precept established in the landmark court decisions, it is worthy of consideration as a principal model for use in estimating the cost rate of common equity capital of a regulated utility. Our approach to the comparable earnings model produces a proxy group that is indeed comparable in total risk because the selection process is objective and quantitative. It therefore overcomes criticism linked to arbitrary selection processes.

All cost-of-common-equity models, including the DCF and CAPM, are fraught with deficiencies, usually stemming from the many necessary but unrealistic assumptions that underlie them. The effects of the deficiencies of individual models can be mitigated by using more than one model when estimating a utility's common equity cost rate. Therefore, when the non-comparability issue is overcome, the comparable earnings model deserves to receive the same consideration as a primary model, as do the currently popular market-based models. ■

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[1] *Bluefield Water Works Improvement Co. v. Public Service Commission*, 262 U.S. 679 (1922) and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 519 (1944).

[2] Charles F. Phillips Jr., The Regulation of Public Utilities: Theory and Practice, Public Utilities Reports Inc., 1988, p. 379.

[3] James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utilities Rates, 2nd edition, Public Utilities Reports Inc., 1988, p. 329.

[4] Jack Clark Francis, Investments: Analysis and Management, 3rd edition, McGraw-Hill Book Co., 1980, p. 363.

[5] Id., p. 548.

[6] Returns on net worth must be used when relying on Value Line data because returns on book common equity for non-utility firms are not available from Value Line.

Report Lists Pipeline, Storage Projects

More than $9 billion worth of projects to expand the nation's natural gas pipeline network are in various stages of development, according to an A.G.A. report. These projects involve nearly 8,000 miles of new pipelines and capacity additions to existing lines and represent 15.3 billion cubic feet (Bcf) per day of new pipeline capacity.

During 1993 and early 1994, construction on 3,100 miles of pipeline was completed or under way, at a cost of nearly $4 billion, says A.G.A. These projects are adding 5.4 Bcf in daily delivery capacity nationwide.

Among the projects completed in 1993 were Pacific Gas Transmission Co.'s 805 miles of looping that allows increased deliveries of Canadian gas to the West Coast; Northwest Pipeline Corp.'s addition of 433 million cubic feet of daily capacity for customers in the Pacific Northwest and Rocky Mountain areas; and the 156-mile Empire State Pipeline in New York.

In addition, major construction projects were started on the systems of Texas Eastern Transmission Corp. and Algonquin Gas Transmission Co. — both subsidiaries of Panhandle Eastern Corp. — and along Florida Gas Transmission Co.'s pipeline.

The report goes on to discuss another $5 billion in proposed projects, which, if completed, will add nearly 5,000 miles of pipeline and 9.8 Bcf per day in capacity, much of it serving Florida and West Coast markets.

A.G.A. also identifies 47 storage projects and says that if all of them are built, existing storage capacity will increase by more than 500 Bcf, or 15 percent.

For a copy of *New Pipeline Construction: Status Report 1993-94* (#F00103), call A.G.A. at (703) 841-8490. Price per copy is $6 for employees of member companies and associates and $12 for other customers.

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Beta Measurements The beta coefficient is an *index of systematic risk.* Beta coefficients may be used for ranking the systematic risk of different assets. If the beta is larger than 1, $b > 1.0$, then the asset is more volatile than the market and is called an **aggressive asset.** If the beta is less than 1, $b < 1.0$, the asset is a **defensive asset;** its price fluctuations are less volatile than the market's. Figure 10-1 illustrates the characteristic lines for three different assets that have low, medium, and high levels of beta (or undiversifiable risk).

Figure 10-2 shows that IBM is a stock with an average amount of systematic risk. IBM's beta of 1.02 indicates that its return tends to increase 2 percent more than the return on the market average when the market is rising. When the market falls, IBM's return tends to fall 2 percent more than the market's. The characteristic line for IBM has an above average correlation coefficient of $\rho = .7495$, indicating that the returns on this security follow its particular characteristic line slightly more closely than those of the average stock.

Partitioning Risk Total risk can be measured by the variance of returns, denoted Var(r). This measure of *total risk is partitioned into its systematic and unsystematic components in Equation (10-8).*[7]

$$\begin{aligned}
\mathrm{Var}(r_i) &= \text{total risk of } i\text{th asset} \\
&= \mathrm{Var}(a_i + b_i r_{m,t} + e_{i,t}) \\
&\quad \text{by substituting } (a_i + b_i r_{m,t} + e_{i,t}) \text{ for } r_{i,t} \\
&= 0 + \mathrm{Var}(b_i r_{m,t}) + \mathrm{Var}(e_{i,t}) \\
&\quad \text{since } \mathrm{Var}(a_i) = 0
\end{aligned} \tag{10-8}$$

$$\begin{aligned}
\mathrm{Var}(r_i) &= b_i^2\,\mathrm{Var}(r_m) + \mathrm{Var}(e) \qquad \text{since } \mathrm{Var}(b_i r_m) = b_i^2\,\mathrm{Var}(r_m) \\
&= \text{systematic} + \text{unsystematic risk}
\end{aligned} \tag{10-8a}$$

$$.01389 = .00780 + .00609 \qquad \text{for IBM}$$

The unsystematic risk measure Var(e) is called in regression language the *residual variance* or, synonymously, the *standard error squared.*

Undiversifiable Proportion The percentage of total risk that is systematic can be measured by the coefficient of determination ρ^2 (that is, the characteristic line's squared correlation coefficient).

[7]In this context, **partition** is a technical statistical term that means to divide the total variance into *mutually exclusive* and *exhaustive* pieces. This partition is only possible if the returns from the market are statistically independent from the residual error terms that occur simultaneously, $\mathrm{Cov}(r_{m,t}, e_{i,t}) = 0$. The mathematics of regression analysis will orthogonalize the residuals and thus ensure that the needed statistical independence exists.

$$\frac{\text{Systematic risk}}{\text{Total risk}} = \frac{b_i^2 \operatorname{Var}(r_m)}{\operatorname{Var}(r_m)} = \rho^2 \tag{10-9}$$

$$\frac{.007802}{.01389} = \frac{(1.021)^2\,(.00749)}{.00749} = .5617 \times 100 = 56.17\% \qquad \text{for IBM}$$

Diversifiable Proportion The percentage of unsystematic risk equals $(1.0 - \rho^2)$.

$$\frac{\text{Unsystematic risk}}{\text{Total risk}} = \frac{\operatorname{Var}(e)}{\operatorname{Var}(r_i)} = (1.0 - \rho^2)$$

$$\frac{.00609}{.01389} = (1.0 - .5617) = .438 \times 100 \tag{10-10}$$

$$= 43.8\% \text{ unsystematic} \qquad \text{for IBM}$$

Studies of the characteristic lines of hundreds of stocks listed on the NYSE indicate that the average correlation coefficient is approximately $\rho = .5$.[8] This means that about $\rho^2 = 25$ percent of the total variability of return in most NYSE securities is explained by movements in the market.

	NYSE average	IBM
Systematic risk: ρ^2	.25	.5617
Unsystematic risk: $(1.0 - \rho^2)$	.75	.4383
Total risk: 100%	1.00	1.0000

As explained above, systematic changes are common to all stocks and are therefore undiversifiable.

A primary use of the characteristic line (or *market model,* or the *single-index model,* as it is also called) is to assess the risk characteristics of one asset.[9] The statistics in Table 10-2, for instance, indicate that IBM's common stock is slightly more risky than the average common stock in terms of total risk and

[8]The average ρ was found to be about .5, as reported in Marshall Blume, "On the Assessment of Risk," *Journal of Finance,* March 1971, p. 4. For similar estimates, see J. C. Francis, "Statistical Analysis of Risk Surrogates for NYSE Stocks," *Journal of Financial and Quantitative Analysis,* Dec. 1979.

[9]Professor Jensen reformulated the characteristic line in a risk-premium form. See M. C. Jensen, "The Performance of Mutual Funds in the Period 1945 through 1964," *Journal of Finance,* May 1968, pp. 389–416. See also M. C. Jensen, "Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios," *Journal of Business,* vol. XLII, 1969. Jensen interprets the alpha intercept term of the characteristic line, as he formulates it, as an investment performance measure. It has been suggested that Jensen's performance measure is biased. See Keith V. Smith and Dennis A. Tito, "Risk-Return Measures of Ex-Post Portfolio Performance," *Journal of Financial and Quantitative Analysis,* Dec. 1969, vol. IV, no. 4, p. 466.

systematic risk.[10] New risk measurements must be made periodically, however, because the risk and return of an asset may change with the passage of time.[11]

10-3 CAPITAL ASSET PRICING MODEL (CAPM)

An old axiom states "there is no such thing as a free lunch." This means that you cannot expect to get something for nothing—a rule that certainly applies to investment returns. Investors who want to earn high average rates of return must take high risks and endure the associated loss of sleep, the possibility of ulcers, and the chance of bankruptcy. The question to which we now turn is: Should investors worry about total risk, undiversifiable risk, diversifiable risk, or all three?

In Chapter 1 it was suggested that *investors should seek investments that have the maximum expected return in their risk class*. Their happiness from investing is presumed to be derived as indicated in the expected utility $E(U)$ function below.

$$E(U) = f[E(r), \sigma]$$

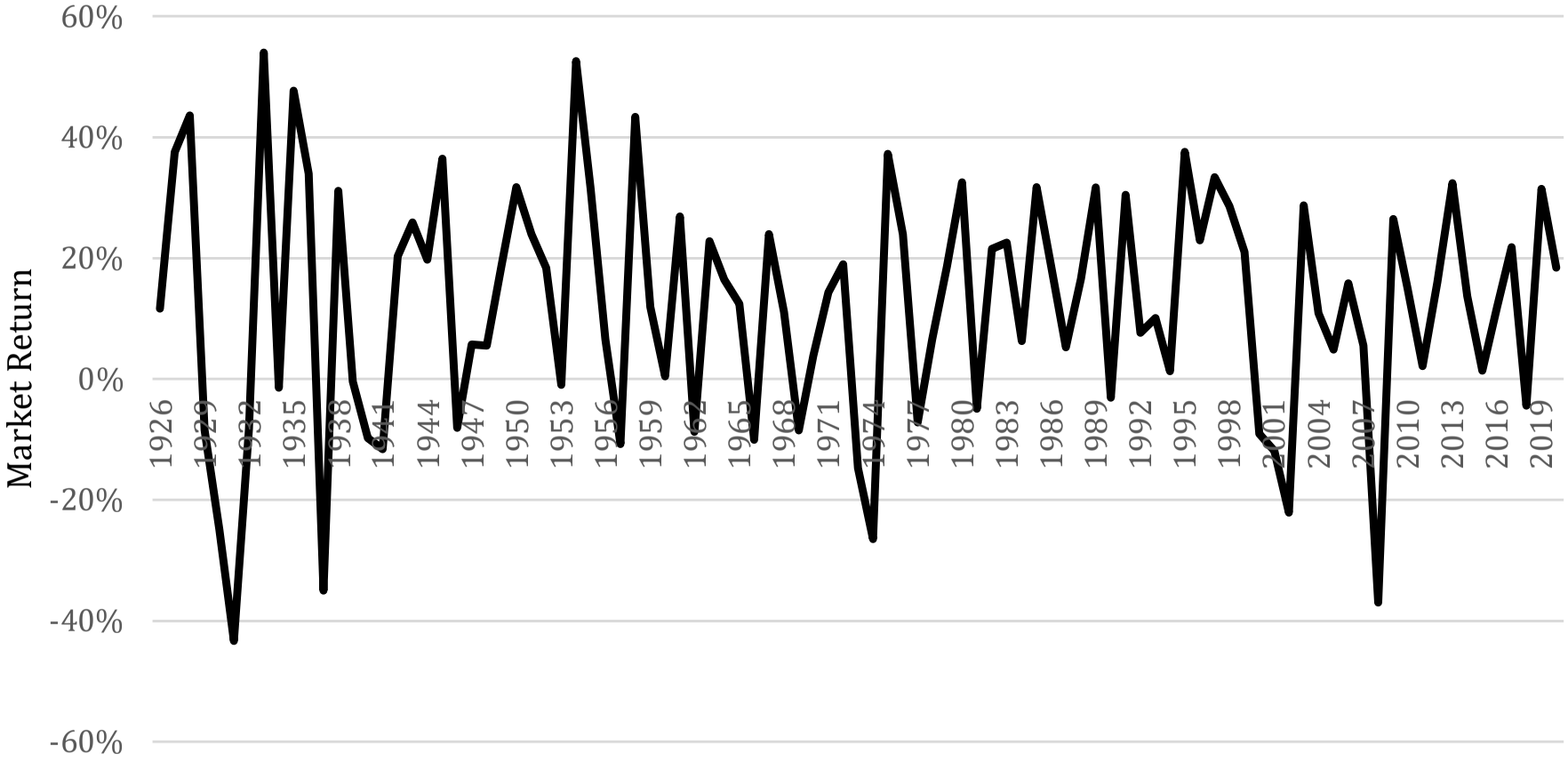
The investment preferences of wealth-seeking risk-averse investors represented by the function above cause them to maximize their expected utility (or, equivalently, happiness) by (1) maximizing their expected return in any given risk class, $\partial E(U)/\partial E(r) > 0$, or, conversely, (2) minimizing their total risk at any given rate of expected return, $\partial E(U)/\partial \sigma < 0$. However, in selecting individual assets, investors will not be particularly concerned with the asset's total risk σ. Figure 9-1 showed that the unsystematic portion of total risk can be easily diversified by holding a portfolio of different securities. But, systematic risk affects all stocks in the market because it is undiversifiable. Portfolio theory therefore suggests that only the undiversifiable (or systematic) risk is worth avoiding.[12]

[10]Statements about the relative degree of total risk are made in the context of a long-run horizon—that is, over at least one *complete business cycle*. Obviously, an accurate short-run forecast which says that some particular company will go bankrupt next quarter makes it more risky than IBM, although IBM may have had more historical variability of return.

[11]Empirical studies documenting the intertemporal instability of betas have been published. Marshall Blume, "Betas and Their Regression Tendencies," *Journal of Finance*, June 1975, pp. 785–795. See also J. C. Francis, "Statistical Analysis of Risk Coefficients for NYSE Stocks," *Journal of Financial and Quantitative Analysis*, Dec. 1979, vol. XIV, no. 5, pp. 981–997. An appendix at the end of this chapter reviews some evidence about shifting betas, standard deviations, and correlations.

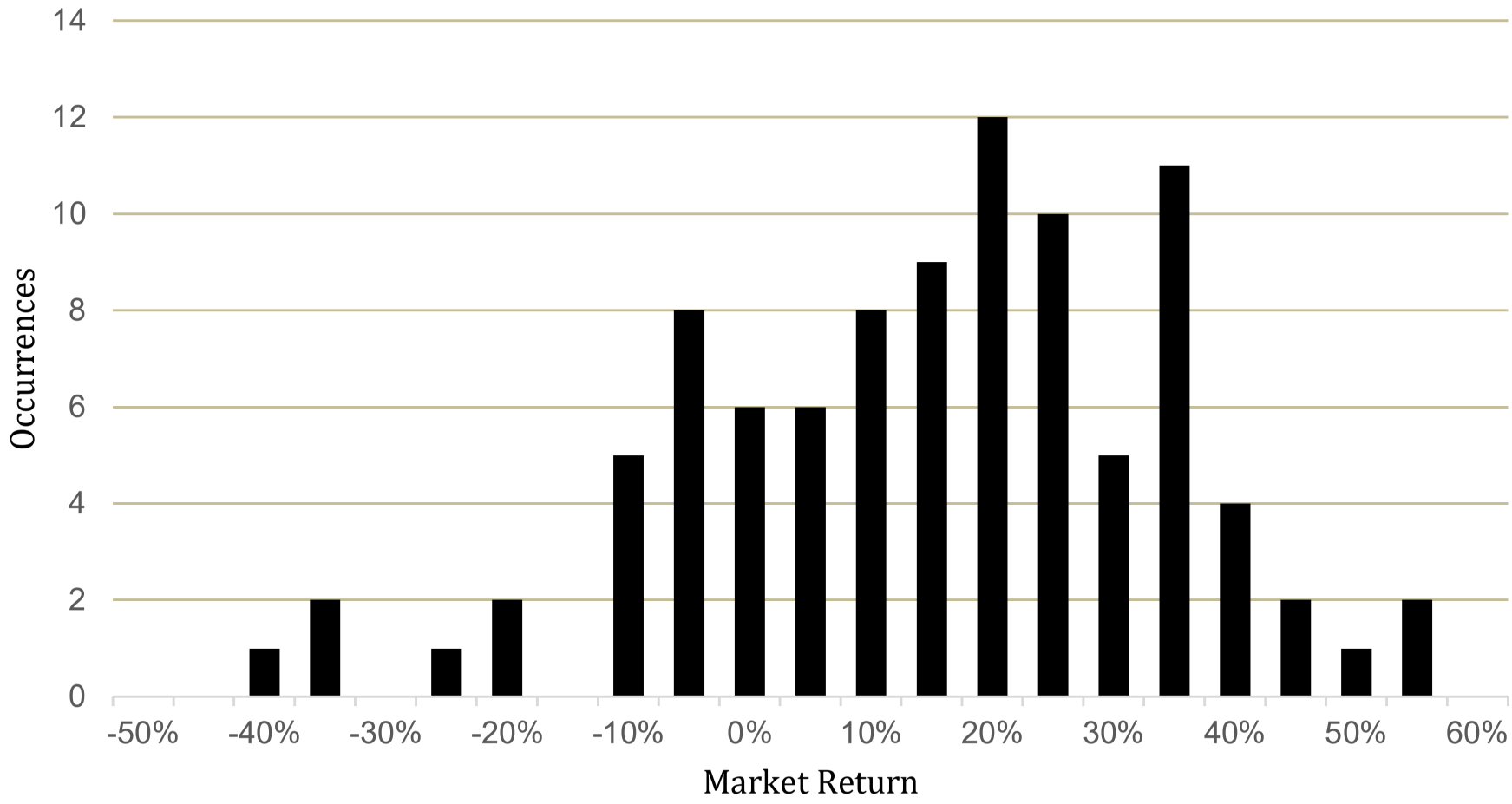
[12]Both the systematic and unsystematic portions of total risk must be considered by **undiversified investors.** Entrepreneurs who have their entire net worth invested in one business, for example, can be bankrupted by a piece of bad luck that could be easily averaged away to zero in a diversified portfolio. Poorly diversified investors should not treat diversifiable risk lightly. Only well-diversified investors can afford to ignore diversifiable risk.

U.S. Large Company Stock Returns 1926 - 2020



Source: Duff & Phelps, SBBI 2021 Yearbook: Stocks, Bonds, Bills, and Inflation 1926 - 2020, Appendix A

Histogram of U.S. Large Company Stock Returns 1926 - 2020



Source: Duff & Phelps, SBBI 2021 Yearbook: Stocks, Bonds, Bills, and Inflation 1926 - 2020, Appendix A

CUPA W STATEMENT NO. 7-R

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REBUTTAL TESTIMONY

OF

EMILY LONG

WATER & WASTEWATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Rebuttal Testimony of Emily Long (Water and Wastewater)

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A: My name is Emily Long. I am the State Operations Manager at Community Utilities of Pennsylvania Inc. ("CUPA" or "Company"). My business address is 570 Hallet Road, East Stroudsburg, PA 18301.

Q: **PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.**

A: I oversee the operation and maintenance of water and wastewater systems within Pennsylvania and New Jersey. Provide leadership and guidance in water and wastewater system management.

Q: **PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.**

A: I graduated from King's College with a Bachelor of Science degree in Environmental Science. I acquired my Master of Science Degree from Columbia Southern University in Occupational Safety and Health with a concentration in Environmental Management. I have been employed by CUPA since October of 2018 as an Operations Manager. Prior to CUPA, I was a Laboratory Supervisor with Fluid Recovery Systems. Prior to Fluid Recovery Systems, I was a Water Treatment Plant Operator with American Water. I hold PA DEP water system certification Class A Subclass 1, 2, 7, 8, 10, 11, and 12. I have passed the water system Class E exam and am awaiting certification from PA DEP.

Q: **HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?**

A: No.

Q: **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A: My testimony: (1) addresses the service related testimony from customers at the public input hearings that occurred on June 29, 2021 which I participated in; (2) responds to the service related testimony from the Office of Consumer Advocate ("OCA") and the Bureau of Investigation and Enforcement ("I&E"); and (3) comments on service related formal complaints filed in this proceeding.

PUBLIC INPUT HEARING TESTIMONY

Q: **DID YOU ATTEND THE PUBLIC INPUT HEARING HELD ON JUNE 29, 2021 IN THIS PROCEEDING?**

A: Yes. I listened into the telephonic public input hearing along with Counsel and CUPA's President, J. Bryce Mendenhall.

Q: **PLEASE SUMMARIZE THE ISSUES FROM THE PUBLIC INPUT HEARINGS.**

A: Customers at the public input hearings raised a number of service related complaints unique to each territory, listed below, which I will address separately:

General Customer Service – customer communications

Tamiment service territory

Water Service
- Water quality, drinkability, and appliance issues
- Hydrant flushing
- low water pressure
- system capacity due to unoccupied convention center
- prior operator opinions

Wastewater Service
- Sewer back flow and grinder pump issues

Penn Estates service territory
- August 2020 system outage
- Boil Water advisories
- Sediment in water and appliance issues

Westgate service territory
- Hydrants and valves exercised and tested

General Customer Service – customer communications

Q: **AT THE PUBLIC INPUT HEARINGS, SOME CUSTOMERS RAISED CONCERNS WITH CUSTOMER SERVICE COMMUNICATIONS AND NOTICES NOT BEING RECEIVED. PLEASE DESCRIBE HOW CUPA COMMUNICATES WITH CUSTOMERS.**

A: CUPA communicates with customers through the customer's individual preferred method, whether that be email, text, or phone, in addition to mailings to the service address or another address a customer has on file if not a permanent residence (particularly in the Tamiment service territory where many of the service addresses are vacation homes or rentals). Customers can access their online account and update their contact information and preferred method of communication at any time to keep CUPA informed of any changes. In addition, customers can call CUPA's customer service and provide updates to their contact information should the customer not be able to update their information through their online account.

Q: **HOW DO EMERGENT ISSUES, SUCH AS OUTAGES OR MAIN BREAKS GET ESCALATED WHEN A CUSTOMER CALLS?**

A: For service-related inquiries, the Company's standard is to respond to all emergency calls-such as water outages, sewer back-ups, main breaks, etc.- immediately. Contact center personnel are trained to ask the customer a series of questions to assist field personnel in their response. Once all pertinent information has been gathered by the contact center, a "field activity" ("FA") is prepared and pushed out to the appropriate field staff for further investigation and intervention. After-hours emergency issues are handled by a third-party service and answered by a live agent. The agent records pertinent information including (1) location: (2) contact information: and (3) service issue. The information is then relayed to the on-call operations technician through text, cell phone and/or email. If the on-call technician does not respond within 15 minutes, the next designated manager/technician is contacted. The Company has multiple staff members across the State serving in on-call status for after hour emergencies every day.

Q: **CUSTOMER SERVICE WAS AN ISSUE DISCUSSED BY CUSTOMERS AT THE PUBLIC HEARING INCLUDING THE ABILITY TO RESOLVE ISSUES WITH THE COMPANY OVER THE PHONE. CAN YOU PLEASE DISCUSS THESE ISSUES?**

A: First, the average hold time for customers calling the Company in 2021 is approximately 41 seconds. Call-by-call volume times can vary based on time of day, system issues, and how busy the call center is at any given time but we operate against a "Target Average Speed of Answer Service Level" of eighty (80%) percent of all calls answered within sixty (60) seconds of entering queue. We recognize that the more customer service personnel we hire, the greater these costs will be for our customers, but I believe that an

average hold time of sixty (60) seconds strikes a reasonable balance. Further, most issues are resolved within 6-7 minutes representing the average customer "treatment time".

Q: **HOW DOES CUPA KNOW IF THE CUSTOMER CONTACT INFORMATION, ASIDE FROM BILLING ADDRESS, IS UP TO DATE FOR EACH CUSTOMER?**

A: CUPA has no way to know if customers are keeping their preferred contact information on their account up-to-date, and relies on customers to keep CUPA informed of any changes in preferred contact method, changes in phone number, changes in mailing address, changes in email address etc.

Tamiment service territory – Water Service

Q: **PLEASE DESCRIBE THE WATER QUALITY RELATED COMPLAINTS FROM THE PUBLIC INPUT HEARING REGARDING THE TAMIMENT SERVICE TERRITORY?**

A: The water quality complaints voiced at the public input hearing relating to Tamiment included statements regarding rings in toilets, discolored clothes, sediment in water, chlorine odor, water quality notices, and failing hot water heaters. However, prior to the public hearing, CUPA received minimal calls or reports from customers with similar complaints.

Q: **CAN YOU DESCRIBE WHAT CUSTOMER COMPLAINTS CUPA HAS RECEIVED FROM TAMIMENT CUSTOMERS REGARDING WATER QUALITY PRIOR TO THE PUBLIC INPUT HEARING?**

A: CUPA received few calls from customers concerning the water quality complaints listed above. In 2019, CUPA received 3 dirty water complaints and one low pressure complaint.

These complaints were related to operations switching between wells while performing maintenance which affected the systems pressure zones. CUPA responded to each of these calls, of which two of the three customer's water had cleared up by the time CUPA arrived to investigate, and the remaining one cleared up after 2-3 minutes of running water once CUPA was on site. There were no follow-up complaints by these customers. In 2020, CUPA received 7 low pressure and 2 chlorine odor water complaints. Five of the low pressure complaints were due to customer plumbing issues such as bad pressure release valves ("PRV") which are the responsibility of the customer. The remaining 2 low pressure calls were the result of Tamiment's Tank 1 level dropping lower than normal from an electrical issue related to a Variable Frequency Device ("VFD"). The VFD issue was resolved within 12 hours of notification to the Company. The 2 chlorine odor complaints were investigated by CUPA, but the operator could not detect any chlorine or other odors from the water at the premises. The hydrants in the area were flushed as a precaution. The water quality notices customers received are referenced in CUPA's 2019 CCR.

Q: **DO ANY OF THE TAMIMENT CUSTOMER COMPLAINTS YOU JUST REFERENCED RAISE ANY CONCERN FOR ONGOING WATER QUALITY ISSUES?**

A: They do not, and in that regard, I agree with the OCA's Mr. Fought's conclusion that the Tamiment customer complaint log does not need to be addressed further. OCA St. No. 4 at 18:18-20.

Q: **ARE YOU AWARE OF CUPA'S ANNUAL WATER QUALITY REPORTS FOR THE TAMIMENT SYSTEM?**

A: Yes, I am aware of the annual water quality reports for Tamiment since CUPA acquired the system. CUPA provided the 2019 and 2020 annual reports to the parties after the public input hearing. Additionally, attached as CUPA Exhibit No. EL-1R are all of CUPA's annual reports since 2018 (or since 2019 for Tamiment after it was acquired).

Q: **DO THE 2019 AND 2020 ANNUAL REPORTS INDICATE CUPA EVER PROVIDED UNSAFE OR INADEQUATE SERVICE.**

A: No. The 2019 report indicated that CUPA did not receive any violations for contaminants or other water quality concerns. As can be seen in the 2019 Tamiment report, the only violations CUPA had were related to recordkeeping and monitoring for chlorine residuals, two of which actually occurred in 2020 and were noted in the 2020 report as well. Similarly, the 2020 report for Tamiment shows that CUPA's only violations were for monitoring chlorine residuals noted in both 2019 and 2020 reports and failure to timely submit reports to PADEP. Therefore, CUPA is providing safe and adequate water service in the Tamiment territory. To correct the timely reporting and data submission issues, staff has prepared and maintains a calendar of testing events to reference each week and/or month to confirm that all required samples have been obtained.

Q: **MOVING ON, PLEASE DISCUSS CUPA'S FIRE HYDRANT TESTING PROGRAMS AND NOTICES TO CUSTOMERS AT TAMIMENT.**

A: CUPA flushes hydrants in water systems at least once per year. CUPA acquired Tamiment 8/14/19 and did not flush hydrants in 2019. Tamiment hydrants were flushed 7/1/20 – 7/6/20. Community wide communication was sent 6/29/20 and 7/2/20 letting customers know hydrants would be flushed. Hydrants were flushed 6/14/21 – 6/18/21,

community wide communication was sent 6/11/21. CUPA has a 3 year hydrant operation and maintenance schedule with Rogers Hydrant Service starting in 2020.

Q: **DO YOU KNOW WHY SOME CUSTOMERS RAISED COMPLAINTS THAT THEY DID NOT RECEIVE NOTICES FROM CUPA?**

A: While I cannot address whether each customer reviewed notices sent by CUPA, I can state that CUPA provides notices to all customers via their preferred method and using information which they provide the Company as I discussed above. CUPA provides notices to all contacts and addresses of record. If a customer registers for our digital platform "My Utility Connect" ("MUC"), they are prompted to enter their phone number and email address. By default, all customers are opted in for voice-reach ("VR") messages via the telephone number provided. Therefore, the telephone number entered will be used for all outbound Company messages. Customers can also opt-in for email and/or text alerts if they desire but that is at their discretion.

Q: **MOVING ON, HAS CUPA RECEIVED COMPLAINTS REGARDING LOW WATER PRESSURE IN THE TAMIMENT SYSTEM?**

A: As I previously discussed above, CUPA has received very few low-pressure complaints, the majority of which were due to customer plumbing issues, while only 2 were related to CUPA's system. Further, only two Tamiment customers at the public input hearings indicated they had low pressure issues. CUPA has addressed the low-pressure concerns within the Tamiment service territory, but generally speaking the data and investigations do not indicate any ongoing or material low pressure concerns as a result of CUPA's service.

Q: **MOVING ON, SOME CUSTOMERS COMPLAINED THAT THEY WERE PAYING FOR TOO BIG OF A WATER AND WASTEWATER TREATMENT PLANT DUE TO THE CONVENTION CENTER NOT BEING IN USE. DO YOU HAVE ANY COMMENTS ON THE CONVENTION CENTER'S VACANCY ON CUPA'S OPERATIONS AND EXPENSES?**

A: Since CUPA acquired Tamiment, the Mt. Laurel Performing Arts Center has been closed. Mt. Laurel Performing Arts Center pays base charges for water and wastewater. If they were using water and wastewater they would be charged per 1,000 gallons water used in addition to the base charge. The closed center has no impact on CUPA's operations or expenses.

Q: **FINALLY, REGARDING THE VARIOUS UPGRADES, MAINTENANCE, AND FACILITIES, JAVIER PASTRANA TESTIFIED AT THE PUBLIC INPUT HEARING WHERE HE CLAIMED TO BE A PRIOR OPERATOR OF THE TAMIMENT SYSTEMS. DO YOU HAVE ANY COMMENTS ON HIS TESTIMONY REGARDING THE STATUS OF THE TAMIMENT SYSTEMS WHEN CUPA ACQUIRED THEM IN 2019?**

A: Javier Pastrana was a part-time operator for Pennsylvania Utility Company, the prior owner of the Tamiment system. Mr. Pastrana and the other operator were not DEP certified water/wastewater operators.

In reference to the wells, Mr. Pastrana stated "both had new pumps installed within the last five years." In September 2019, Well 3 pump failed and was replaced. Due to poor condition, CUPA also replaced the pump electrical wire and piping, check valve, and all fittings. In June 2020, Well 1 pump failed and was replaced. Due to poor condition,

CUPA also replaced the pump electrical wire and piping, check valve, and all fittings. Once acquired, CUPA operators performed all internal lab work to ensure the system was operating properly. The results of internal lab work performed that day by the Pennsylvania Utility Company operators, who were not DEP certified, did not match the results from CUPA operators which are DEP certified.

Additionally, when CUPA first took over operations, there was excessive sludge in the trains of the Waste Water Treatment Plant. The filter could not be backwashed due to failed equipment. CUPA proactively rehabbed the WWTP filter throughout 2019 – 2020. This consisted of new filter media, new pumps, and piping. Likewise, when CUPA first took over operations, the lagoon pump was broken and the spray irrigation system could not be utilized. CUPA hired a 3rd party to mow the grass around spray heads, replace irrigation spray heads, install a new pump, and unblocked the lagoon pump intake screen once CUPA took over operations after the acquisition. The entire Wastewater Treatment Plant (WWTP) and office were covered in bird fecal matter. The WWTP, office, and warehouse were cluttered with the personal belongings of Pennsylvania Utility Company operators such as abandoned vehicles, living room furniture, large fish tanks containing snapping turtles, tires, etc. CUPA cleaned these areas in 2019 and also improved the facility in 2020. The WWTP electrical system was in disrepair and was replaced and upgraded in 2020. The Lake Side Lift Station will be scheduled for replacement, with engineering to occur in 2021 and construction in 2022. This project will also remove the Labar Lift Station. To further show the status of the Tamiment facilities as well as the significant and necessary work CUPA put in to the facilities once acquired, please see the attached CUPA Exhibit No. EL-4R. As can be seen, Exhibit No. EL-4R depicts many of

the "before and after" pictures of the Tamiment system as acquired in 2019, and the significant and necessary repairs CUPA has undertook at the facilities since then. As I just described, the testimony of the prior operator at the public input hearing is inaccurate at best, and intentionally misleading at worse. The fact remains that while many may not like rate increases, upgrades cost money and changes to rates are necessary to provide the level of service that CUPA aspires.

Tamiment service territory – Wastewater Service

Q: **PLEASE DESCRIBE THE SEWER BACK FLOW AND GRINDER PUMP ISSUES RAISED AT THE PUBLIC INPUT HEARING.**

A: As described in OCA Statement No. 4 at page 30, seven customers complained about sewer back flow issues, including backflow valves, and grinder pump failures. In particular, Jessica Cline testified to her issues which occurred in July 2020 where her backflow check valve failed while no one was at the service address, leading to wastewater entering her house.

Q: **WHAT IS A SEWER BACKFLOW VALVE AND DOES CUPA MAINTAIN OR OPERATE THESE?**

A: A sewer backflow valve, also known as a sewer check valve, is valve which only allows flow in one direction. Its purpose is to prevent sewer from flowing into a home when the grinder pump is not running. CUPA is not responsible for the maintenance or operation of sewer check valves on customer-owned facilities or lines, instead they are the customer's responsibility to maintain.

Q: **WHAT IS A GRINDER PUMP AND WHY IS IT NEEDED AT SOME PROPERTIES IN THE TAMIMENT SERVICE TERRITORY?**

A: The Glen at Tamiment is serviced by a low pressure sewer force main. Due to the elevation changes of the terrain in The Glen a gravity collection system was not installed. A grinder pump is needed to discharge wastewater into the low pressure force main. These types of customer-owned facilities are not unusual—for instance many customers across the country have to use sump pumps due to the location of their home or its construction. Not all customers in Tamiment require grinder pumps, and the customer grinder pumps are limited to certain areas as the system was originally designed. Ultimately, the grinder pump is the customer's property and responsibility to maintain. A diagram depicting a general layout for low-pressure systems which utilize customer owned grinder pumps is attached as CUPA Exhibit No. EL-2R

Q: **PLEASE DISCUSS THE GRINDER PUMP FAILURE COMPLAINTS THE COMPANY HAS RECEIVED.**

A: The Glen at Tamiment's Community Manager contacted me in 2020 with concerns related to grinder pumps. She was receiving grinder pump complaints from the community and wanted to bring it to my attention. I informed her we were receiving very few customer calls related to grinder pumps and to have the customers contact us directly so we could investigate directly. Subsequently, grinder pump related calls to CUPA increased in June 2020. CUPA and our contractor, Environmental Services Corporation (ESC), attended a board meeting at The Glen on July 19, 2020. CUPA answered questions relating to the gravity collections system, low-pressure force main system, lift stations, and maintenance of them. CUPA and ESC explained grinder pumps, the customer check valves, CUPA's operating PSI, and customer responsibilities related to grinder pumps.

Q: **WHAT HAPPENED NEXT?**

A: On July 20, 2020 CUPA and ESC investigated the areas of The Glen experiencing grinder pump issues. They found no blockages and force main pressures ranging from 5-20 PSI, which is below the operating PSI of a grinder pump. ESC released air within the low pressure force main. After releasing the air, the system pressure remained 5-20 PSI. ESC installed 3 new air release valves (ARV) in the low pressure force main and repaired the one existing ARV. Based on CUPA's and ESC's investigation, the 2019 and 2020 grinder pump issues are not the result of CUPA's system or failure thereof.

Q: **WHY IS IT IMPORTANT THAT WHEN ESC RELEASED THE AIR WITHIN THE MAIN, THERE WAS NO CHANGE IN PRESSURE?**

A: The results of the investigation finding no build up in pressure in the main indicates that there is no concern for increased system pressure within the main even prior to ESC installing 3 new ARVs and repairing another. After installation of the new ARVs, CUPA believes it is very unlikely that there is any pressure buildup within the main which could impact customer's check valves and grinder pumps. Therefore, CUPA's system was not and is not negatively impacting customer owned check valves and grinder pumps, and the failures of those devices raised by customers is not attributable to CUPA.

Q: **AT PAGE 30 OF OCA STATEMENT NO. 4, MR. FOUGHT RECOMMENDS THAT WHILE GRINDER PUMPS ARE THE CUSTOMER'S RESPONSIBILITY, CUPA SHOULD PROVIDE INFORMATION REGARDING GRINDER PUMP SYSTEMS TO CUSTOMERS WHO HAVE THEM. IS THIS SOMETHING THE COMPANY IS WILLING TO DO?**

A: Yes. In fact, CUPA already provided significant information to the Community during the July 19, 2020 community meeting. I have attached the questions from that meeting and CUPA's answers which were distributed to customers as CUPA Exhibit No. EL-3R. Additionally, the image depicting grinder pumps I previously identified was distributed to customers at the meeting. See CUPA Exhibit No. EL-2R.

Q: **PLEASE DESCRIBE THE CLINE PROPERTY INCIDENT WHICH WAS DISCUSSED AT THE PUBLIC INPUT HEARING.**

A: As Ms. Cline discussed on the record during the public input hearing, she was out of town for about five days during July 2020, and returned to her house flooded with sewage. N.T. 211. In particular, Ms. Cline indicated she returned home on July 8, 2020. N.T. 213. Two days later on July 10, 2020, Ms. Cline called CUPA Customer Service stating "sewage back up into home and grinder pump overflowed." CUPA promptly investigated the incident once alerted that it had occurred.

Q: **WHAT WAS CUPA'S RESPONSE?**

A: CUPA operations responded to the field activity and noted "Plumber came and fixed check valve and turned sewer curb stop back on." The customer had a plumber fix their failed check valve. Again, the check valve is the customer's property and responsibility to maintain.

<u>Penn Estates service territory</u>

Q: **PLEASE DISCUSS THE AUGUST 2020 WATER OUTAGE EVENT THAT OCCURRED IN THE PENN ESTATES SERVICE TERRITORY WHICH MULTIPLE CUSTOMERS TESTIFIED ABOUT AT THE PUBLIC INPUT HEARING.**

A: In early 2020, tank levels in the Penn Estates system were not able to replenish to their normal levels at night despite all available wells running. Stressed wells started underperforming resulting in 3 well pumps being replaced in 2020 and one subsequently in 2021. During 2020, water usage was elevated due to Covid-19 and more people staying home which further stressed the underperforming wells. Additionally, operators at Penn Estates systematically searched for leaks in the system beginning in early 2020 to confirm whether there were other contributing factors to the tank level issue. A leak detecting company was contracted to look for leaks in targeted areas of the community. In May 2020, CUPA started sending voice reaches (VR) asking customers to conserve water and look for leaks within and around their homes. Also, on May 20, 2020, CUPA started hauling in bulk water to supplement tank levels.

On August 3, 2020, the highest elevation tanks became low for the first time and the company issued a boil water advisory (BWA) and DEP was notified. CUPA rapidly responded to support its customers and provided pallets of bottled water to the customers which were delivered to the community's Welcome Center, and CUPA continued to maintain a constant supply of bottled water for almost 3 weeks at the Welcome Center. In that same time period, operations discovered and repaired 3 large leaks in the system in July through August 2020. CUPA worked closely with DEP to collect the required water samples and the BWA was rescinded on August 13, 2020. To date, CUPA has not received any notice of violations from the incident from DEP.

CUPA received many questions from the Community. A letter explaining what happened was mailed to all customers September 8, 2020. That letter was posted in the Community's monthly newsletter in October 2020.

In total, during 2020 CUPA estimated 11,749,540 gallons in main breaks/leaks were identified and fixed at Penn Estates. Of that total, 7,334,540 gallons (or 62%) in main breaks/leaks were identified and fixed July to August.

Q: **CAN YOU PROVIDE AN OVERVIEW AND TIMELINE OF THE EVENTS JUST DISCUSSED AND CUPA'S EFFORTS TO REMEDY THE AUGUST 2020 PENN ESTATES CRITICAL WATER LEVEL EVENT?**

A: Below is Table 1 summarizing the timeline of the August 2020 Penn Estates event:

Date	CUPA steps taken
5/15/20, 5/18/20, 6/17/20, 6/19/20, 6/22/20, 7/27/20, 7/29/20, 7/31/20, 8/3/20	Sent VRs to customers to conserve water and look for leaks. Operations actively in field looking for leaks.
5/20/20	Started hauling bulk water to supplement tank levels
8/3/20	BWA issued and VR sent to whole system. DEP was notified. Pallets of water were delivered to the community Welcome Center for customers to use.
8/13/20	BWA was rescinded.
8/20/20	Stopped bulk water hauling as tank levels had stabilized
9/8/20	CUPA mailed letter to customers summarizing what happened, what step were taken, and the results of CUPA's repairs correcting the issues
October 2020	Letter posted to Penn Estates Community newsletter

Q: **HAS PENN ESTATES TERRITORY EXPERIENCED ANY OTHER BOIL WATER ADVISORIES?**

A: Penn Estates had no BWAs in 2019. The only BWA in 2020 was during the August 2020 event discussed above. Finally, one BWA was issued so far in 2021 – on 3/12/21 CUPA issued a BWA to 92 affected customers due to a water main break and the BWA was rescinded on 3/15/21. The issuance of a BWA due to a water main break is a common industry practice.

Q: **A FEW CUSTOMERS AT THE PUBLIC INPUT HEARING FROM PENN ESTATES COMPLAINED OF SEDIMENT ISSUES AND CONCERNS FOR THAT BEING THE CAUSE OF DAMAGE TO CUSTOMER APPLIANCE DAMAGE. DO YOU HAVE ANY COMMENTS?**

A: I do not recall sediment complaints being a prevalent issue raised by customers and I reviewed the customer complaints CUPA received from 7/1/2019-6/30/21. During that 2-year period in the Penn Estates territory, CUPA received five related complaints - only one sediment related call and four appliance related calls. Regarding the sediment call, the customer called about red rusty sediment in their pressure gauge located just after the meter. CUPA provided the customer with a new pressure gauge upon investigating the complaint. The four appliance calls were complaints related to the water pressure being too high and either claiming that the pressure damaged their water heater or the heaters pressure reducing valve (PRV). CUPA recommends all homes have PRVs. The maintenance of PRVs is the responsibility of the customer, a fact of which CUPA informed each customer at the time of CUPA's investigation.

Q: **ARE YOU AWARE OF CUPA'S ANNUAL WATER QUALITY REPORTS FOR THE PENN ESTATES SYSTEM?**

A: Yes, I am aware of the annual water quality reports for Penn Estates. CUPA provided the 2018, 2019, and 2020 annual reports to the parties after the public input hearing. See my previous exhibit CUPA Exhibit No. EL-1R.

Q: **DO THE 2018, 2019, OR 2020 ANNUAL REPORTS TO DEP INDICATE CUPA EVER PROVIDED UNSAFE OR INADEQUATE SERVICE IN PENN ESTATES?**

A: No. The 2018 report indicates only one violation for the secondary contaminant, Manganese, and the report further indicates that well 8, the source of the Manganese, was taken offline. In all other aspects, the report only indicates that CUPA failed to retain reporting data for chlorine residuals. The 2019 report indicated that CUPA exceeded the Arsenic standard on one sample, but steps were taken and the issue was resolved. Additionally, CUPA again referenced the Manganese sampling and well 8 as discussed in the 2018 report. Finally, the 2019 report indicated a number of monitoring, record keeping, and reporting violations. Lastly, the 2020 report for Penn Estates shows that CUPA's only violations were for routine monitoring violations. Therefore, CUPA is providing safe and adequate water service in the Penn Estates territory.

<u>Westgate service territory</u>

Q: **AT THE PUBLIC INPUT HEARING, CUSTOMERS VOICED CONCERNS REGARDING CUPA'S HYDRANT AND VALVE EXERCISING IN WESTGATE. PLEASE DISCUSS CUPA'S HYDRANT AND VALVE EXERCISING PROGRAM.**

A: The Westgate hydrant and valve exercising complaints voiced at the public input hearing consisted of hydrant flushing maintenance, beliefs that there is a lack of maintenance on valves, and beliefs of leaking valves. CUPA has a 3-year hydrant operation and maintenance schedule with a new service company, Rogers Hydrant Service, which started in 2020. The schedule includes hydrants being flushed two times per year, and customers receive notice of the flushing at least one day in advance through their on-file preferred communication method I discussed previously.

Regarding valves, CUPA actively maintains and monitors its valves at regular intervals. In 2020, CUPA undertook an extensive valve inspection program on Westgate water mains and generated inspection reports which allowed CUPA to create a strategic plan to isolate areas and insert new valves and/or repair or replace existing valves. Based on the inspection program, CUPA began its valve replacement program in early 2021 and is in the process of replacing valves and inserting additional valves in the system.

Q: **DO YOU HAVE ANYTHING ELSE TO ADD REGARDING THE WESTGATE VALVE EXERCISE AND REPLACEMENT PROGRAM?**

A: Yes. During the 2020 inspection program, 100% of the Westgate system valves were inspected. Seventy-one valves were identified and two in prior system records were found to be non-existent during this inspection. In 2021 and in future years, 50% of valves will be inspected each year in rotation. Valves are grouped into Zone 1 and Zone 2. Zone 1 valves will be exercised in odd number years. Zone 2 will be exercised in even number years. Valve inspections consist of exercising a water valve and filling out an inspection report to detail valve condition findings.

Q: **ARE YOU AWARE OF CUPA'S ANNUAL WATER QUALITY REPORTS FOR THE WESTGATE SYSTEM?**

A: Yes, I am aware of the annual water quality reports for Westgate. CUPA provided the 2018, 2019, and 2020 annual reports to the parties after the public input hearing. See CUPA Exhibit No. EL-1R.

Q: **DO THE 2018, 2019, OR 2020 ANNUAL REPORTS INDICATE CUPA EVER PROVIDED UNSAFE OR INADEQUATE SERVICE IN WESTGATE?**

A: No. CUPA purchases its water in the Westgate system from the City of Bethlehem. The 2018 and 2019 reports indicate no violations, and the 2020 report indicates a single failure to monitor and report violation. Therefore, CUPA is providing safe and adequate water service in the Westgate territory.

<u>Responses to the direct testimony of the Office of Consume Advocates Terry Fought</u>

Q: **DID YOU REVIEW THE TESTIMONY OF TERRY FOUGHT, OCA STATEMENT 4?**

A: Yes. I reviewed the direct testimony of Mr. Fought, and previously addressed some of the testimony above. In addition, I will address some of the issues raised by Mr. Fought not previously discussed below.

Q: **AT PAGE 12, LINE 22 OF OCA STATEMENT 4, MR. FOUGHT PROVIDES TESTIMONY REGARDING STEPS THAT CAN BE TAKEN REGARDING LOW PRESSURES IN THE PENN ESTATES SYSTEM. DO YOU HAVE ANY COMMENTS ON HIS PROPOSAL?**

A: Yes, CUPA has already begun the project engineering and planning Mr. Fought describes. CUPA's contractor, GHD evaluated the system in late 2020 and early 2021

and provided recommendations to improve system operations to minimize loss of service. This report dated February 23, 2021, makes the following recommendations: install new well(s), increase well efficiency, develop a written SOP for loss events, install booster pump to increase pressure in system, hire third party leak detection specialist. CUPA has projected engineering for a new well to start in 2023. CUPA has written a Standard Operating Procedure for water loss events and has a third party leak detection specialist available. GHD has also assisted CUPA in assessing the feasibility of an interconnect with another water system.

Q: **AT PAGE 16, LINE 4 OF OCA STATEMENT 4, MR. FOUGHT PROVIDES TESTIMONY REGARDING THE PENN ESTATES WATER SYSTEM AND DISCOLORATION COMPLAINTS AND WHAT INFORMATION SHOULD BE PROVIDED. DO YOU HAVE ANY COMMENT?**

A: GHD evaluated the system and provided recommendations to improve system operations to minimize loss of service, report dated February 23, 2021. Regarding lowering the well pump, CUPA's well permits would need to be reviewed and amended through DEP to lower a well pump which would be a costly and lengthy process which is not cost effective when compared to possibly permitting a new well for supply. Regarding manganese treatment, GHD has provided a quote to add manganese treatment at well 8. The price to add manganese treatment is not justified compared to the available capacity from the well. Finally, as stated above, engineering for a new well is projected to start in 2023.

Q: **AT PAGE 16, LINE 20 OF OCA STATEMENT 4, MR. FOUGHT PROVIDES TESTIMONY REGARDING THE PENN ESTATES DELIVERED WATER**

DURING THE AUGUST 2020 EVENT AND CUSTOMER COMPLAINTS OF DIRTY WATER. DO YOU HAVE ANY COMMENT?

A: When water was hauled in by truck and pumped into the tank, the water flowing into the tank from the truck stirred sediment on the bottom of the tank resulting in customers experiencing dirty water. When operations realized this was the cause of the dirty water they shut the tank valve prior to water being off loaded to prevent any stirred up sediment from leaving the tank and allowed it to settle prior to reopening the valve. That isolated incident will thus not reoccur.

Q: **AT PAGE 17, LINE 4 OF OCA STATEMENT 4, MR. FOUGHT ASKS THE COMPANY TO EXPLAIN WHY NO BWA NOTICES WERE ISSUED PRIOR TO AUGUST 3, 2020. DO YOU HAVE ANY COMMENT?**

A: Yes, bulk water hauling started 5/20/20 prior to tanks emptying and pressure in the system dropping. As the tanks were not empty and the system still had suitable pressures there was no need for a BWA under the rules and regulations of the Pennsylvania Department of Environmental Protection. Once the tank emptied and pressures in the system were inadequate, CUPA complied with the notice requirements and issued the prompt BWA on August 3.

Q: **AT PAGE 17, LINES 9 AND 14 OF OCA STATEMENT 4, MR. FOUGHT ASKS THE COMPANY TO PROVIDE INFORMATION REGARDING THE FINAL DISPOSITION OF THE 2 ILLNESS RELATED COMPLAINTS IN THE COMPANY'S RECORDS. DO YOU HAVE ANY COMMENT?**

A: Yes. On May 7, 2019, Customer 291 called to "advise that his family became ill in March" and requested to talk to a supervisor. CUPA's Area Manager spoke with

Customer 291 on May 8, 2019. Customer 291 called again May 17, 2019 and requested to speak to Operations Supervisor, "stated he and family became ill and stated it was due to our water supply." CUPA's area manager returned the call and spoke to Customer 291 on May 17, 2019. The manager explained the DEP required wording of the Public Notice the customer received, what happened, and explained the DEP required distribution bacteria samples for March and April were compliant with DEP's regulations. Customer 291 was satisfied with explanation and no further contact was received. Customer 348 called April 30, 2019stating his son was sick during the time reflected in the Public Notice. Area manager spoke to Customer 348 on May 1, 2019, explained the DEP required wording of the Public Notice the customer received and was referring to regarding his concerns, what happened, and explained the DEP required distribution bacteria samples for March and April were compliant. No further contact was received.

Q: **AT PAGE 18, LINE 4 OF OCA STATEMENT 4, MR. FOUGHT ASKS THE COMPANY TO PROVIDE INFORMATION REGARDING COMPLAINTS ABOUT MOLD. DO YOU HAVE ANY COMMENT?**

A: In August 2019, Customer 1023 called Customer Service to report black sediment in toilets and dishwasher. Operations investigated. Chlorine residual from customer's premise was lower than the rest of the area. The first set of water samples came back positive for mold, the second set came back negative. DEP was notified and recommended that a Do Not Drink should not be sent to customers since the source was unknown and it was unknown if it was localized to this one customer or throughout the system. The community is a gated community and Customer 1023 posted her issue on the Community's Facebook page. This resulted in an influx of customer's calling Customer

Service. Staff pulled samples from another residence in the same geographic area and submitted for testing at a third-party laboratory. The certified results from this testing did not indicate the presence of mold. Operations flushed hydrants, went door to door performing Cross Connection Inspections, delivered pallets of bottled water to the community's Club House, and worked closely with Community Management to ensure questions regarding mold were addressed.

Subsequently, Operations discovered closed distribution valves within the community which created dead-ends. This caused chlorine residuals to drop lower than the surrounding area, allowed for sediment to accumulate, and diminished the effectiveness of flushing. These valves were opened, the area was unilaterally flushed, and chlorine was monitored following valve correction to ensure the issue was resolved.

The 9/15/2020 complaint's black residue was originating from their internal plumbing which their plumber confirmed. The 11/3/2020 complaint's pink faucet growth was due to airborne bacteria within her home growing externally on her faucets and unrelated to CUPA's water service.

Q: **AT PAGE 19, LINE 2 OF OCA STATEMENT 4, MR. FOUGHT SUMMARIZES THE FORMAL COMPLAINTS FILED BY CUSTOMERS WITH SERVICE-RELATED COMPLAINTS. DO YOU HAVE ANY COMMENT?**

A: Yes. See my answer above on Page 5. To summarize, based on Tamiment's Customer Service historical complaint log, the formal rate complaints filed that contained service allegations and the complaints made during the 6/29/21 public input hearing are not substantiated.

Q: **AT PAGE 21, LINE 34 OF OCA STATEMENT 4, MR. FOUGHT SUMMARIZES THE PUBLIC INPUT HEARING COMPLAINTS. DO YOU HAVE ANY CORRECTIONS TO THOSE SUMMARIES?**

A: Yes. Janine Marino stated "several years ago when an increase was asked for, it was found that there were severe issues with the tank due to lack of maintenance by the Company." N.T. 48, 50. The "Company" Ms. Marino is referring to is Pennsylvania Utility Company whom CUPA purchased the system from in 2019. The maintenance she is referring to was performed by Pennsylvania Utility Company, not CUPA.

Q: **IN OCA STATEMENT 4 AT PAGE 24, MR. FOUGHT PROVIDES VARIOUS ISSUES WHICH HE REQUESTS THE COMPANY SHOULD ADDRESS REGARDING THE TAMIMENT WATER SYSTEM. PLEASE ADDRESS THIS REQUEST.**

A: Mr. Fought requested that the Company provide recent laboratory tests for total dissolved solids (TDS), sulfate and hardness for each of its two wells to investigate the various water quality complaints raised at the public input hearing which he lists on page 21-22 of OCA Statement 4. However, the Company does not possess any recent laboratory tests for these parameters as they are not required by DEP. Those items requested by Mr. Fought are listed by the EPA as "Secondary Drinking Water Standards" and were created to assist in managing for aesthetic components such as taste, color and odor. Additionally, OCA has not proposed any adjustments to recover the cost of this secondary standard testing in their direct testimony.

<u>Responses to the direct testimony of the Bureau of Investigation and Enforcement's Esyan Sakaya</u>

Q: **DID YOU REVIEW THE TESTIMONY OF ESYAN SAKAYA, I&E STATEMENT NO. 3 FOR WATER AND WASTEWATER?**

A: Yes.

Q: **DO YOU HAVE ANY COMMENTS ON ESYAN SAKAYA'S WATER TESTIMONY?**

A: Yes. I&E's witness Sakaya testified generally to the public input testimony and summarized various concerns raised including sediment, brown water or residue, general low-quality water complaints, and customer's decision to buy bottled water for consumption. I&E Statement No. 3 at 24. While I addressed the majority of these concerns above, I have not addressed the various customer statements that they feel the need to purchase bottled water for drinking and cooking. As shown in CUPA's annual water quality reports which I discussed above, CUPA's water meets all requirements for the PADEP for drinking water standards, and the only violations CUPA received were related to monitoring and reporting requirements or on matters that have been remediated or resolved by the Company. If a customer chooses not to consume CUPA's water despite meeting all health-related requirements of the PADEP, that decision is of the consumer alone.

Additionally, I&E's witness Sakaya states that customers testified that the Company does not timely notify customers of boil water advisories. I discussed previously the customer notification issues for updated contact information and preferred method. In addition, I

would note that each of CUPA's BWA's were issued in compliance with PADEP's regulations in 25 Pa. Code Chapter 109 regarding public notification.

Formal Complaints filed against rate case

Q: **ARE YOU AWARE OF THE AMOUNT OF FORMAL COMPLAINTS THAT HAVE BEEN FILED AGAINST THE RATE INCREASE REQUEST BY CUPA?**

A: Yes, I am advised by Counsel that there were almost 100 formal complaints filed by customers regarding the rate increase request. While I have not reviewed each complaint in detail, less than 10 of those complaints make any reference to any quality of service concerns, whether that be water quality, low pressure, or other related concerns. OCA's Mr. Fought found a similar result and identified only seven of the formal complaints discussing quality of service issues (all of which he referenced were in the Tamiment system). See OCA Statement No. 4 at 19.

Q: **WHAT DOES THAT INDICATE TO YOU REGARDING THE QUALITY OF SERVICE COMPLAINTS RAISED AT THE PUBLIC INPUT HEARING?**

A: It shows that these complainants do not like rate increases. While customers at the public input hearings provided complaints regarding quality of service, as I previously discussed very few of these complaints were previously raised to CUPA or to customer service based on the Company's complaint log, and even less were described by customers in their formal complaints filed with the Commission. CUPA takes pride in its safe and reliable service, and while the public input hearing elicited service related allegations from customers, CUPA can only respond to, investigate, and address concerns customers actually relay to the company. As I discussed above, when concerns are raised by customers, CUPA has shown and proven it swiftly responds to and assists customer with

their concerns – a practice that CUPA will continue to employ in all aspects of customer relations.

Q: **DOES THIS CONCLUDE YOUR PREPARED REBUTTAL TESTIMONY?**

A: Yes, however I reserve the right to supplement or make corrections to this testimony.

CUPA Exhibit No. EL-1R

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2018

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2018. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2018. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

MY UTILITY CONNECT

DOWNLOAD OUR MOBILE APP!

- Pay utility bill
- Manage account settings
- Monitor usage
- Connect with Customer Service

How Easy Is My Utility Connect to Find?
Go to www.uiwater.com/pennsylvania or search "MyUtilityConnect" in the App Store or Google Play Store.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A source water assessment of the Towamensing, Walcksville and the Trimmers Rock geologic aquifer, which supplies water for Community Utilities of Pennsylvania, Inc. was completed by the PA Department of Environmental Protection (PADEP).

Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

More information is available at www.bethlehem-pa.gov. Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.	
Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2018.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

Water quality violations are noted within the Water Quality Tables. In addition, please see the last page of the report for additional information.

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Sample Period	Units	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper						
Jan. – June 2018 Monitoring Period	ppm	0.64	3 of 40 samples	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
July – Dec. 2018 Monitoring Period	ppm	0.77	5 of 40 samples	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead						
Jan. – June 2018 Monitoring Period	ppb	1.76	0 of 40 samples	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
July – Dec. 2018 Monitoring Period	ppb	2.42	0 of 40 samples	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Arsenic (ppb)	2018	N	9.05	ND - 15.7	0	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2018	N	0.0127	ND - 0.0421	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

One sample collected for arsenic in 12/2018 showed a level above 10 ppb which did not result in a violation during 2018. After a verification sample was collected in 1/2019 which also resulted in a level above 10 ppb, customers were notified on 2/5/19 of the elevated arsenic results. Measures have been taken to lower the levels and increased monitoring has shown the levels below the MCL. Customers will be notified if the average were to exceed the MCL. Please see the following for EPA's required language: *Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.*

Nitrate/Nitrite Contaminants

Nitrate (as Nitrogen) (ppm)	2018	N	0.4	ND - 0.70	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Volatile Organic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Ethylbenzene (ppb)	2018	N	0.15	N/A	700	700	Discharge from petroleum refineries
Toluene (ppm)	2018	N	0.00011	N/A	1	1	Discharge from petroleum refineries
Xylenes (ppm)	2018	N	0.0013	N/A	10	10	Discharge from petroleum refineries; Discharge from chemical factories
Chloroethane (ppb)	2018	N	0.0428	N/A	N/A	N/A	Byproduct of drinking water chlorination
Chloromethane (ppb)	2018	N	0.0380	N/A	N/A	N/A	Byproduct of drinking water chlorination
4-methyl-2-pentanone (ppb)	2017	N	0.89	N/A	N/A	N/A	N/A

Water Quality Test Results

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Manganese (ppm)	2018	Y	0.144	ND - 0.798	N/A	0.05	Erosion of natural deposits
Well 8, which is 1 of 7 wells within the water system, exceeded the EPA Lifetime Health Advisory level for Manganese. Well 8 has been taken offline and an assessment is being done to see if further treatment is needed. Although manganese is an essential nutrient at low doses, chronic exposure to high doses may pose health risks. There is little data for the consumption exposure to manganese and health effects. Manganese is considered a secondary contaminant with a Secondary Maximum Contaminant Level (SMCL). SMCL's are not health-based standards; rather they are set for aesthetic effects. Excess manganese could produce a brownish color in laundered goods, impair the taste of tea, coffee, and other beverages and may cause a dark brown or black stain on porcelain plumbing fixtures.							
Chloride (ppm)	2018	N	37	22 - 54	N/A	250	Erosion of natural deposits
Sulfate (ppm)	2018	N	16	11 - 23	N/A	250	Erosion of natural deposits
*Copper (ppm)	2017	N	0.635	0.635	N/A	1.0	Erosion of natural deposits, leeching from wood preservatives
**The copper sample was collected at the water plant and was not collected as part of the Lead and Copper rule.*							

Radiological Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Combined Radium (pCi/l) (Radium-228)	2015	N	1.09	1.09	0	5	Erosion of natural deposits

Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2018	N	1.19	0.21 - 3.41	MRDLG = 4	MRDL = 4	Water additive used to control microbes

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2018	27.6	23.2 - 35.6
Magnesium	2017	6.29	N/A

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MAINTAIN RECORDS

ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA DE BEBER. TRADUZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

Recordkeeping Requirements Not Met for well 5 entry point 105

Recordkeeping Requirements Not Met for well 6 entry point 106

Recordkeeping Requirements Not Met for well 7 entry point 107

We violated a drinking water requirement.

We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

What should I do?

There is nothing you need to do at this time. You may continue to drink the water. If a situation arose where the water is no longer safe to drink, you will be notified within 24 hours.

What happened? What was done?

The chlorine analyzer at well 6 failed to record chlorine residuals from 2/1/19 to 3/14/19. This was corrected on 3/14/19.

The chlorine analyzer at well 7 failed to record chlorine residuals from 3/19/19 to 4/4/19. This was corrected on 4/4/19.

The chlorine analyzer at well 5 failed to record chlorine residuals from 4/9/19 to 5/2/19. This was corrected on 5/2/19.

The chlorine analyzer at well 7 failed to record chlorine residuals from 4/4/19 to 5/1/19. This was corrected on 5/1/19.

Community Utilities of Pennsylvania, Inc. is taking steps to resolve communication issues between chlorine analyzers and data collection equipment. Steps are also being taken to create a redundant chlorine residual data collection system. Corrective steps are expected to be completed by September 2019. The February, March, and April chlorine residual monitoring within the distribution system, as required by DEP, was within compliance.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, Maryland 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with CCR

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2019. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2019. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.**

For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A source water assessment of the Towamensing, Walcksville and the Trimmers Rock geologic aquifer, which supplies water for Community Utilities of Pennsylvania, Inc. was completed by the PA Department of Environmental Protection (PADEP).
Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.
Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.
The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.	
Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2019.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Sample Period	Units	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper						
Jan. – June 2018 Monitoring Period	ppm	0.64	3 of 40 samples	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
July – Dec. 2018 Monitoring Period	ppm	0.77	5 of 40 samples			
Jan — Jun 2019 *Represents sampling outside of compliance period	ppm	0.24-0.899	0 of 2 samples			
*Additional individual samples were collected in 2019 with 0 of 2 samples exceeding the copper AL. *Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.*						
Lead						
Jan. – June 2018 Monitoring Period	ppb	1.76	0 of 40 samples	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits.
July – Dec. 2018 Monitoring Period	ppb	2.42	0 of 40 samples			
Jan — Jun 2019 *Represents partial sampling outside of compliance period	ppb	ND-37	1 of 2 samples			
*Additional individual samples were collected in 2019 with 1 of 2 samples exceeding the lead AL at 37 ppb. *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*						

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Radiological Contaminants							
Combined Radium (pCi/l) (Radium-228)	2015	N	1.09	1.09	0	5	Erosion of natural deposits
Inorganic Contaminants							
Arsenic (ppb)	2019	Y*	4.8	ND - 27.5	0	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2018	N	0.0127	ND - 0.0421	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
*The issue has been resolved. One sample collected for arsenic in 12/2018 showed a level above 10 ppb which did not result in a violation during 2018. After a verification sample was collected in 1/2019 which also resulted in a level above 10 ppb, customers were notified on 2/5/19 of the elevated arsenic results. Measures have been taken to lower the levels and increased monitoring has shown the levels below the MCL. Customers will be notified if the average were to exceed the MCL. Please see the following for EPA's required language: *Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system,*							
Nitrate/Nitrite Contaminants							
Nitrate (as Nitrogen) (ppm)	2019	N	0.18	ND - 0.55	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Water Quality Test Results

Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2019	See Violation Section	1.34	0.46 - 2.09	MRDLG = 4	MRDL = 4	Water additive used to control microbes

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCL	Likely Source of Contamination
*Manganese (ppm)	2018-2019	Y	0.1191	ND - 0.798	0.05	Erosion of natural deposits
Iron (ppm)	2019	N	ND	ND	1.0	Erosion of natural deposits
Chloride (ppm)	2018	N	37	22 - 54	250	Erosion of natural deposits
Sulfate (ppm)	2018	N	16	11 - 23	250	Erosion of natural deposits
**Lead (ppm)	2019	N	ND	ND	0.015	Erosion of natural deposits, leeching from wood preservatives

**Well 8, which is 1 of 7 wells within the water system, exceeded the EPA Lifetime Health Advisory level for Manganese in 2018. Well 8 has been taken offline and an assessment is being done to see if further treatment is needed. Although manganese is an essential nutrient at low doses, chronic exposure to high doses may pose health risks. There is little data for the consumption exposure to manganese and health effects. Manganese is considered a secondary contaminant with a Secondary Maximum Contaminant Level (SMCL). SMCL's are not health-based standards; rather they are set for aesthetic effects. Excess manganese could produce a brownish color in laundered goods, impair the taste of tea, coffee, and other beverages and may cause a dark brown or black stain on porcelain plumbing fixtures.*

***The lead samples was collected in raw water and was not collected as part of the Lead and Copper rule.*

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2018	27.6	23.2 - 35.6
Magnesium	2017	6.29	N/A

PFAS Testing

Community Utilities of Pennsylvania, Inc. is currently conducting statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Notification has or will be sent to all registered customers of the testing results once completed.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Additional Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2019:

Haloacetic Acids (HAA5)

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE (DBP), MAJOR	09/05/2019	09/30/2019 - Result ND (MCL 60 ppb)	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Sample taken 9/30/19.

Total Trihalomethanes (TTHM)

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE (DBP), MAJOR	09/05/2019	10/17/2019 - Result ND (MCL 80ppb)	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Sample taken 10/17/2019.

Groundwater Rule/Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Recordkeeping Requirements Not Met for well 6 entry point 106	02/01/2019	03/14/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 7 entry point 107	03/19/2019	04/04/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 5 entry point 105	04/09/2019	05/02/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 7 entry point 107	04/04/2019	05/01/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	06/28/2019	06/28/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	03/11/2019	3/12/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	03/22/2019	03/23/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	04/06/2019	04/06/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to monitor or report for the disinfectant specified.	3/21/19	3/31/19	PA DEP received the report late. Compliance has been achieved.

Revised Total Coliform Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to properly collect or analyze RTCR routine samples.	9/23/19	10/7/19	PA DEP received the report late. Compliance has been achieved.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Haloacetic Acids (HAA5) and Total Trihalomethanes (TTHM)

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. Haloacetic Acid and Trihalomethane samples were required to be collected on 09/05/2019. We failed to collect them on 09/05/2019 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for Haloacetic Acids and Trihalomethanes and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
HAA5	1/year	1	09/05/2019	09/30/2019
TTHM	1/year	1	09/05/2019	10/17/2019

What happened? What was done?

PA DEP requires that HAA5 and TTHM samples be taken 09/05/2019. Samples were taken late on 09/30/2019 and 10/17/2019, both results were ND.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, MD 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with Annual 2019 CCR

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual.

The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet. For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A source water assessment of the Towamensing, Walcksville and the Trimmers Rock geologic aquifer, which supplies water for Community Utilities of Pennsylvania, Inc. was completed by the PA Department of Environmental Protection (PADEP).

Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
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The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

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Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

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We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

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Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Contaminant (Units)	Sample Date	Action Level (AL)	MCLG	90th Percentile Value	# of sites Above AL of Total Sites	Violation	Likely Source of Contamination
Copper (ppm)	2020	1.3	1.3	1.16	3 out of 40	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb)	2020	15	0	3.0	3 out of 40	N	Corrosion of household plumbing systems, erosion of natural deposits.

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.*
Lead*: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

Chemical Contaminants

Contaminant (units)	Sample Date	MCL/MRDL Violation Y/N	Your Water Average	Range Low-High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2020	N	1.89	0.3 - 2.86	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Nitrate (as Nitrogen) (ppm)	2020	N	0.81	ND - 7.32	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Nitrate *in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.*

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCL	Likely Source of Contamination
Sulfate (ppm)	2018	N	16	11 - 23	250	Erosion of natural deposits
**Lead (ppb)	2020	N	10	ND– 48	15	Erosion of natural deposits
**Copper (ppm)	2020	N	0.307	ND-0.578	1.3	Erosion of natural deposits, leeching from wood preservatives

***Lead and Copper samples were collected at Entry Point and was not collected as part of the Lead and Copper rule.*

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Arsenic (ppm)	2020	N	0.002	0.002 - 0.002	0	0.01	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2020	21.43	17.7 - 24.0
Magnesium	2017	6.29	N/A

PFAS Testing

Community Utilities of Pennsylvania, Inc., Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.
For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

PFAS Results (***All results reported as Nanograms per liter (ng/L)***)

Contaminant	Sample Date	Range of Detect	Average	EPA Advisory	Below HAL
PFOS	2020	ND - 2.2	<2.0	70	Yes
PFOA	2020	ND - 2.0	<2.0	70	Yes
Combined PFOS + PFOA	2020	ND - 4.2	2.1	70	Yes

Terms and Abbreviations:

- **PFOS** – Perfluorooctane Sulfonate
- **PFOA** – Perfluorooctanoic Acid
- **Health Advisory Level (HAL)** – To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA established the healthadvisory levels at 70 parts per trillion.
- **Ng/L** – Nanograms per liter(ng/L) which equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.
- **ND (No Detect)** - No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters.

Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2020:

Synthetic Organic Chemicals (SOCs)

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine	10/20/2020	12/29/2020	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Samples were missed in the 3rd quarter. They were taken in the 4th quarter 12/29/2020, the results were non-detect.

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for EP108 Synthetic Organic Compounds (SOCs).

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. SOC samples were required to be collected within the 3rd quarter of 2020. We failed to collect them within the 3rd quarter of 2020 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for SOCs and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
SOC	1 in 2nd Quarter 1 in 3rd Quarter	1 in 2nd Quarter	1 in 2nd Quarter 1 in 3rd Quarter	12/29/2020

What happened? What was done?

PA DEP requires that EP108 SOC samples be taken every 3 years during 2nd and 3rd quarters. Samples were missed in the 3rd quarter. They were taken in the 4th quarter 12/29/2020, the results were non-detect.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, MD 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with Annual 2020 CCR

Community Utilities of Pennsylvania, Inc.
Tamiment Resort Water System

PWS ID: **PA2520070**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2019. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2019. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.**
For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from three wells that draw groundwater from three aquifers in Pike County located within community boundaries in the Lehman Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A Source Water Assessment of our source(s) was completed by the PA Department of Environmental Protection (PA. DEP). The Assessment has found that our source(s) of is/are potentially most susceptible to Low Density Development, Golf Courses, Major Roads, UST sites, Agriculture and Municipal Waste. Overall, our source(s) has/have moderate risk of significant contamination. Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

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We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

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Parts per quadrillion (ppq)	One parts per quadrillion, or picograms per liter
Parts per trillion (pptt)	One parts per trillion, or nanograms per liter
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
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Water Quality Test Results

Lead and Copper

Sample Period	Units	90th Percentile Value	# of Sites Above AL of Total Sites	Action Level (AL)	MCL	Likely Source of Contamination
Copper 6/1/19-9/30/19	ppm	0.171	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead 6/1/19-9/30/19	ppb	0	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Chemical Contaminants

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Trihalomethanes (ppb)	80	80	7.4	1.1-7.4	9/5/19	N	By-product of drinking water chlorination
Nitrate (mg/l)	10.0	10.0	0.317	0.315-0.320	10/3/19	N	Run-off from fertilizer use, leaching septic tanks and sewage
Chlorine (mg/l)	4	4	1.43	0.66-3.15	2019	See Violation Section	Water additive used to control microbes
Radium 226 (pCil)	5	5	0	0–0.02	4/16/15	N	Erosion of natural deposits
Radium 228 (pCil)	5	5	0	0-0.48	4/16/15	N	Erosion of natural deposits

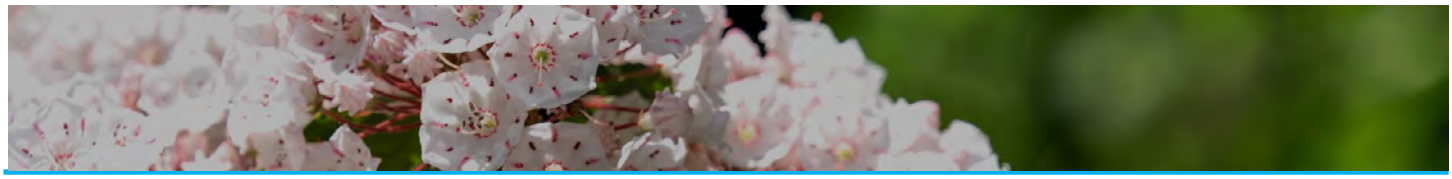
Microbial

Contaminants	TT	MCLG	Assessments/ Corrective Actions	Highest # or % of Positive Samples	Violation Y/N	Sources of Contamination
Total Coliform Bacteria	Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement	N/A	None required	1	N	Naturally present in the environment.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.

PFAS Testing

Community Utilities of Pennsylvania, Inc. is currently conducting statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Notification has or will be sent to all registered customers of the testing results once completed.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.



Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2019:

Groundwater Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Recordkeeping Requirements Not Met for well 1 & 3 entry point 101 & 103	08/01/2019	08/14/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for distribution sampling	08/05/2019	09/022019	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for distribution sampling	04/09/2020	04/23/20209	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for well 1 & 3 entry point 101 & 103	3/10/2020	3/11/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MAINTAIN RECORDS

ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA DE BEBER. TRADUZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

Recordkeeping Requirements Not Met for Well 1 and Well 3 entry point chlorine residuals.

We violated a drinking water requirement.

We failed to retain written records about our recycled flows in accordance with the Filter Backwash Recycling Rule.

We failed to notify the Department that we are recycling our waste stream.

X We incurred a record keeping violation under the Safe Drinking Water Act.

What should I do?

There is nothing you need to do at this time. You may continue to drink the water. If a situation arised where the water is no longer safe to drink, you will be notified within 24 hours.

What happened? What was done?

Community Utilities of Pennsylvania acquired the Pennsylvania Utilities Company water system on 8/14/19. The well 1 and 3 entry point chlorine residual records taken by Pennsylvania Utilities Company for 8/1/19-8/13/19 could not be found. When Community Utilities of Pennsylvania acquired the system on 8/14/19, operations started monitoring chlorine and maintaining records.

For more information, please contact Emily Long - P.O. Box 379, Dunkirk, MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania.

PWS ID#: 2520070
Date distributed: Direct Mail with Annual 2019 CCR

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Distribution Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd, 3rd, 4th, and 5th weeks of August we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of August	2/week	2/week

What happened? What was done?

Community Utilities of Pennsylvania acquired the Pennsylvania Utilities Company water system on 8/14/19. DEP's Drinking Water Reporting System states that 2 distribution chlorine samples are required per month. On 9/10/19 DEP informed Community Utilities of Pennsylvania that 2 distribution chlorine samples are required per week. Starting September 2019, Community Utilities of Pennsylvania will ensure 2 distribution chlorine samples are monitored per week.

For more information, please contact Emily Long - P.O. Box 379, Dunkirk, MD 20754 at 1-800-638-0262..

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania.

PWS ID#: 2520070 Date distributed: Direct Mail with Annual 2019 CCR

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Distribution and Entry Point Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd and 3rd weeks of March we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time. On 3/10/2020 we did not monitor entry point chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and entry point chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of March, 2 during the 4th week of March	2/week	2/week
Entry Point Chlorine	2/day	2/day every day in March except 3/10/2020	2/day	2/day

What happened? What was done?

The water operator failed to collect distribution samples the 2nd and 3rd weeks of March. The water operator also failed to collect entry point samples March 10th. This water operator is no longer employed by the company.

For more information, please contact Emily Long – PO Box 379, Dunkirk MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you Community Utilities of Pennsylvania.

PWS ID#: 2520070 Date distributed: Direct Mail with Annual 2019 CCR

Community Utilities of Pennsylvania, Inc.
Tamiment Resort Water System

PWS ID: **PA2520070**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.
Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual. The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet.
For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from three wells that draw groundwater from three aquifers in Pike County located within community boundaries in the Lehman Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A Source Water Assessment of our source(s) was completed by the PA Department of Environmental Protection (PA. DEP). The Assessment has found that our source(s) of is/are potentially most susceptible to Low Density Development, Golf Courses, Major Roads, UST sites, Agriculture and Municipal Waste. Overall, our source(s) has/have moderate risk of significant contamination. Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754 -0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Millirems per year (Mrem/year)	A measure of radiation absorbed by the body.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Parts per quadrillion (ppq)	One parts per quadrillion, or picograms per liter
Parts per trillion (pptt)	One parts per trillion, or nanograms per liter
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Inorganic Chemicals

Contaminant (Units)	Sample Date	Action Level (AL)	MCLG	90th Percentile Value	# of sites Above AL of Total Sites	Violation	Likely Source of Contamination
Copper (ppm)	2019	1.3	1.3	0.171	0	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb)	2019	15	0	0	0	N	Corrosion of household plumbing systems, erosion of natural deposits.

Radiological Contaminants

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Radium 226 (pCil)	5	5	0	0–0.02	4/16/15	N	Erosion of natural deposits
Radium 228 (pCil)	5	5	0	0-0.48	4/16/15	N	Erosion of natural deposits

Disinfectant / Disinfection By-Products

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Trihalomethanes (ppb)	80	80	1.1	1.1 - 1.1	09/2020	N	By-product of drinking water chlorination
Chlorine (mg/l)	4	4	1.15	0.40 - 1.72	2020	See Violation Section	Water additive used to control microbes

PFAS Testing

Community Utilities of Pennsylvania, Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) were tested during 2020 with no detection. No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters. Nanograms per liter (ng/L) equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2020:

Groundwater Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring Requirements Not Met for well 1 & 3 entry point 101 & 103	3/10/2020	3/11/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

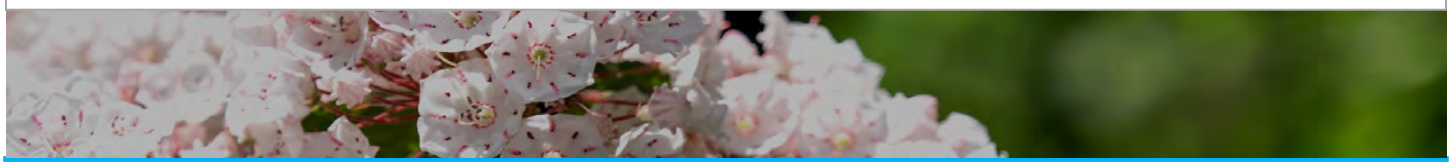
Revised Total Coliform Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to Properly Collect or Analyze RTCR Routine Samples	04/09/2020	04/23/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Reporting, Routine	6/10/2020	7/15/2020	We failed to report 2 distribution sample results to the PADEP by the required reporting date. Results were submitted on 7/15/2020.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/



IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Distribution and Entry Point Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd and 3rd weeks of March we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time. On 3/10/2020 we did not monitor entry point chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and entry point chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of March, 2 during the 4th week of March	2/week	2/week
Entry Point Chlorine	2/day	2/day every day in March except 3/10/2020	2/day	2/day

What happened? What was done?

The water operator failed to collect distribution samples the 2nd and 3rd weeks of March. The water operator also failed to collect entry point samples March 10th. This water operator is no longer employed by the company.

For more information, please contact Emily Long – PO Box 379, Dunkirk MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you Community Utilities of Pennsylvania.

PWS ID#: 2520070 Date distributed: Direct Mail with Annual 2019 CCR

Community Utilities of Pennsylvania, Inc.
Westgate Water System

PWS ID: **PA3480024**

Annual Water Quality Report 2018

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2018. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2018. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

MY UTILITY CONNECT

DOWNLOAD OUR MOBILE APP!

- Pay utility bill
- Manage account settings
- Monitor usage
- Connect with Customer Service

How Easy Is My Utility Connect to Find?

Go to www.uiwater.com/pennsylvania or search "MyUtilityConnect" in the App Store or Google Play Store.

Source of Drinking Water

Our water is purchased water from City of Bethlehem.

Source Water Assessment

A Source Water Assessment of the Tunkhannock Creek Intake, which supplies surface water to the Bethlehem Filtration Plant, was completed in 2001 by Spotts, Stevens and McCoy, Inc. for the PA DEP. The Assessment has found that the Tunkhannock Intake is potentially most susceptible to road deicing materials, accidental spills along roads and leaks in underground storage tanks. Overall, the Tunkhannock Creek Watershed has high risk of significant contamination. In the event that monitoring of either the raw or finished water identifies or detects any of these contaminants then additional required health effects information will be included in this report noting these detections and attempting to identify the potential source(s) of the contamination.

Complete reports were distributed to the City of Bethlehem's Water Bureau, local municipalities, county planning agencies and PA DEP offices. Copies of the complete report are available from the PA DEP Northeast Regional Office, Records Management Section at (570) 826-5472. A summary report of the Assessment is available on the PA DEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

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We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
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Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2018.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

In 2018, Community Utilities of Pennsylvania, Inc. performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received **no violations** from PADEP and was in compliance with applicable testing and reporting requirements.

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Water Quality Test Results - Community Utilities of Pennsylvania, Inc. Westgate

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90th percentile)	2016	0.107	None	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	2016	5	None	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectant / Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine, Total (ppm)	2018	No	1.24	1.18 - 1.34	MRDLG = 4	MRDL = 4	Water additive used to control microbes
TTHM (ppb) (Site 701) Total Trihalomethanes]	2018	No	52.075	29.2 - 81.6	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) (Site 701) [Total Haloacetic Acids]	2018	No	25.1	N/A	N/A	60	By-product of drinking water disinfection
TTHM (ppb) (Site 702) Total Trihalomethanes]	2018	No	46.6	N/A	N/A	80	By-product of drinking water disinfection
HAA5 (ppb) (Site 702) [Total Haloacetic Acids]	2018	No	36.375	26.4 - 50.8	N/A	60	By-product of drinking water disinfection

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Water Quality Test Results - City of Bethlehem, PA

Inorganic Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2017	N	<1.0	N/A	2	2*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

The City of Bethlehem has been adding Fluoride to their drinking water since June 1971.
**EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.*

Turbidity

Contaminant (units)	MCL Violation Y/N	Your Water	Lowest Monthly % of samples meeting TT	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	No	0.044	100%	N/A	TT = 1 NTU	Soil runoff

Turbidity *is a measure of the cloudiness of the water. The City of Bethlehem monitors it because it is a good indicator of the effectiveness of the filtration system.*
NTU *(Nephelometric Turbidity Units) - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.*
Treatment Technique (TT) *- A required process intended to reduce the level of a contaminant in drinking water. For turbidity this means any monthly sample greater than 1 NTU or 95% of the monthly samples are greater than or equal to 0.3 NTU.*

Unregulated Contaminant Monitoring*

Contaminant (units)	Reported Level	Range	Major Sources
Strontium	12.25 ug/L	10.8 - 15.4 ug/L	Naturally occurring element
Chromium	0.27 ug/L	0.16 - 0.40 ug/L	Naturally occurring element
Chromium, hexavalent	0.066 ug/L	0.05 - 0.08 ug/L	Naturally occurring element
4-androstene-3,17-dione	0.00079 ug/L	ND - 0.00079 ug/L	Steroidal hormone naturally produced in the body

**Unregulated Contaminant Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.*

Community Utilities of Pennsylvania, Inc.
Westgate Water System

PWS ID: **PA3480024**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2019. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2019. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.** For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Our water is purchased water from City of Bethlehem.

Source Water Assessment

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If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

In 2019, Community Utilities of Pennsylvania, Inc. performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received **no violations** from PADEP and was in compliance with applicable testing and reporting requirements.

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Water Quality Test Results - Community Utilities of Pennsylvania, Inc. Westgate

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90th percentile)	2019	0.068	None	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	2019	ND	None	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

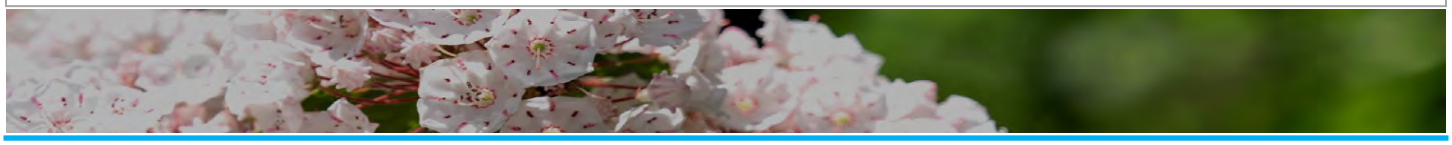
Disinfectant / Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine, Total (ppm)	2019	No	0.99	0.23 - 1.37	MRDLG = 4	MRDL = 4	Water additive used to control microbes
TTHM (ppb) Total Trihalomethanes]	2019	No	30.6	13.8 - 37.1	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	2019	No	23.1	13.2 - 33.9	N/A	60	By-product of drinking water disinfection

PFAS Testing

Community Utilities of Pennsylvania, Inc. is currently conducting statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Notification has or will be sent to all registered customers of the testing results once completed.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/



2019 Water Quality Test Results - City of Bethlehem, PA

Inorganic Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2019	N	<1.0	N/A	4	4*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

The City of Bethlehem has been adding Fluoride to their drinking water since June 1971.
**EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.*

Turbidity

Contaminant (units)	MCL Violation Y/N	Your Water	Lowest Monthly % of samples meeting TT	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	No	0.045	100%	N/A	TT = 1 NTU	Soil runoff

Turbidity *is a measure of the cloudiness of the water. The City of Bethlehem monitors it because it is a good indicator of the effectiveness of the filtration system.*
NTU *(Nephelometric Turbidity Units) - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.*
Treatment Technique (TT) *- A required process intended to reduce the level of a contaminant in drinking water. For turbidity this means any monthly sample greater than 1 NTU or 95% of the monthly samples are greater than or equal to 0.3 NTU.*

Unregulated Contaminant Monitoring*

Contaminant (units)	Reported Level	Range	Major Sources
Chromium	0.24 ug/L	0.16 - 0.33 ug/L	Naturally occurring element
Chromium, hexavalent	0.064 ug/L	0.050 - 0.080 ug/L	Naturally occurring element
Manganese	2.80 ug/L	2.25 - 3.98 ug/L	Naturally occurring element
Strontium	11.18 ug/L	10.80 -11.70 ug/L	Naturally occurring element
4-androstene-3,17-dione	0.00079 ug/L	ND - 0.00079 ug/L	Steroidal hormone naturally produced in the body
Bromochloroacetic Acid	1.48 ug/L	0.47 - 2.13 ug/L	By-product of drinking water chlorination
Bromodichloroacetic Acid	1.72 ug/L	1.21 - 3.24 ug/L	By-product of drinking water chlorination
Dichloroacetic Acid	13.34 ug/L	1.35 - 27.2 ug/L	By-product of drinking water chlorination
Monochloroacetic Acid	2.84 ug/L	ND - 2.84 ug/L	By-product of drinking water chlorination
Trichloroacetic Acid	19.22 ug/L	5.76 - 29.3 ug/L	By-product of drinking water chlorination

**Unregulated Contaminant Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.*

Community Utilities of Pennsylvania, Inc.
Westgate Water System

PWS ID: **PA3480024**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual. The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet.

For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Our water is purchased water from City of Bethlehem.

Source Water Assessment

A Source Water Assessment of the Tunkhannock Creek Intake, which supplies surface water to the Bethlehem Filtration Plant, was completed in 2001 by Spotts, Stevens and McCoy, Inc. for the PA DEP. The Assessment has found that the Tunkhannock Intake is potentially most susceptible to road deicing materials, accidental spills along roads and leaks in underground storage tanks. Overall, the Tunkhannock Creek Watershed has high risk of significant contamination. In the event that monitoring of either the raw or finished water identifies or detects any of these contaminants then additional required health effects information will be included in this report noting these detections and attempting to identify the potential source(s) of the contamination.

Complete reports were distributed to the City of Bethlehem's Water Bureau, local municipalities, county planning agencies and PA DEP offices. Copies of the complete report are available from the PA DEP Northeast Regional Office, Records Management Section at (570) 826-5472. A summary report of the Assessment is available on the PA DEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

A Source Water Assessment of the Wild Creek Watershed was conducted. Copies of the final July, 2004 Report are available from the PA DEP Regional Office, Records Management Section. The final assessment found that the Wild Creek Watershed is potentially most susceptible to individual point source activities including above ground storage tanks and underground petroleum storage tanks and to non-point source activities including fuel oil storage tanks, household cleaning supplies, highway spills, highway salt applications, lawn care supplies, on-lot sewage disposal, petroleum pipelines, swimming pools, wells (abandoned or active) and bore holes (abandoned or active). Overall, because of all the potential threats identified near the water supply, the adoption of a source water protection plan was recommended. More information is available at http://www.bethlehem-pa.gov. call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

In 2020, Community Utilities of Pennsylvania, Inc. performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received **no violations** from PADEP and was in compliance with applicable testing and reporting requirements.

Water Quality Test Results - Community Utilities of Pennsylvania, Inc. Westgate

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90th percentile)	2019	0.068	None	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	2019	ND	None	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectant / Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2020	N	1.10	0.86 - 1.25	MRDLG = 4	MRDL = 4	Water additive used to control microbes
TTHM (ppb) [Total Trihalomethanes]	2020	N	32.0	23.2 - 41.1	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	2020	N	16.13	12.3 - 22.8	N/A	60	By-product of drinking water disinfection

PFAS Testing

Community Utilities of Pennsylvania, Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) were tested during 2020 with no detection. No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters. Nanograms per liter (ng/L) equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

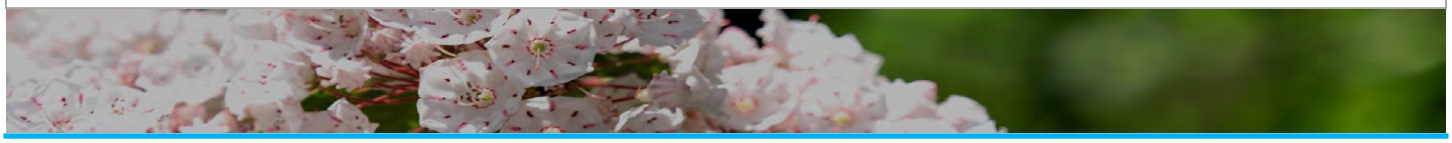
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations - Disinfectant / Disinfection By-Product

Violation Type	Violation Begin	Violation End	Violation Explanation
FAILURE TO MONITOR OR REPORT FOR THE CONTAMINANT SPECIFIED	12/31/2020	1/3/2021	*We failed to collect Haloacetic Acid and Trihalomethane samples on 01/03/2021 and therefore cannot be sure of the quality of our drinking water during that time.* Samples were taken three days too early on 12/31/2020. All results of Haloacetic Acids and Trihalomethanes collected in 2020 were below the MCL.

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/



2020 Water Quality Test Results - City of Bethlehem, PA

Inorganic Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2020	N	<0.50	N/A	4	4*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Iron (ppm)	2020	N	0.03	NA	NA	0.3	Naturally occurring element
Sodium (ppm)	2020	N	7.2	6.5 - 7.8	NA	NA	Naturally occurring element
Zinc (ppm)	2020	N	0.043	0.027 - 0.059	NA	5	Naturally occurring element
Sulfate (ppm)	2020	N	4	NA	NA	250	Naturally sources
Total Dissolved Solids (ppm)	2020	N	54	42 - 66	NA	500	Naturally sources, chemicals used in the water treatment process, and distribution piping.

The City of Bethlehem has been adding Fluoride to their drinking water since June 1971.
**EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.*

Turbidity

Contaminant (units)	MCL Violation Y/N	Your Water	Lowest Monthly % of samples meeting TT	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	No	0.051	100%	N/A	TT = 1 NTU	Soil runoff

Turbidity *is a measure of the cloudiness of the water. The City of Bethlehem monitors it because it is a good indicator of the effectiveness of the filtration system.*
NTU *(Nephelometric Turbidity Units) - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.*
Treatment Technique (TT) *- A required process intended to reduce the level of a contaminant in drinking water. For turbidity this means any monthly sample greater than 1 NTU or 95% of the monthly samples are greater than or equal to 0.3 NTU.*

Unregulated Contaminant Monitoring*

Contaminant (units)	Reported Level	Range	Major Sources
Manganese	2.80 ug/L	2.25 - 3.98 ug/L	Naturally occurring element
Bromochloroacetic Acid	1.48 ug/L	0.47 - 2.13 ug/L	By-product of drinking water chlorination
Bromodichloroacetic Acid	1.72 ug/L	1.21 - 3.24 ug/L	By-product of drinking water chlorination
Dichloroacetic Acid	13.34 ug/L	1.35 - 27.2 ug/L	By-product of drinking water chlorination
Monochloroacetic Acid	2.84 ug/L	ND - 2.84 ug/L	By-product of drinking water chlorination
Trichloroacetic Acid	19.22 ug/L	5.76 - 29.3 ug/L	By-product of drinking water chlorination

**Unregulated Contaminant Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.*

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for haloacetic acids and trihalomethanes.

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. Haloacetic acid and trihalomethane samples were required to be collected on 01/03/2021. We failed to collect them on 01/03/2021 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for this year, how often we are supposed to sample for haloacetic acids and trihalomethanes and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were taken
HAA5	1/quarter	1	01/03/2021	12/31/2020
TTHM	1/quarter	1	01/03/2021	12/31/2020

What happened? What was done?

PA DEP requires that HAA5 and TTHM samples be taken 01/03/2021. Samples were taken three days too early on 12/31/2020.

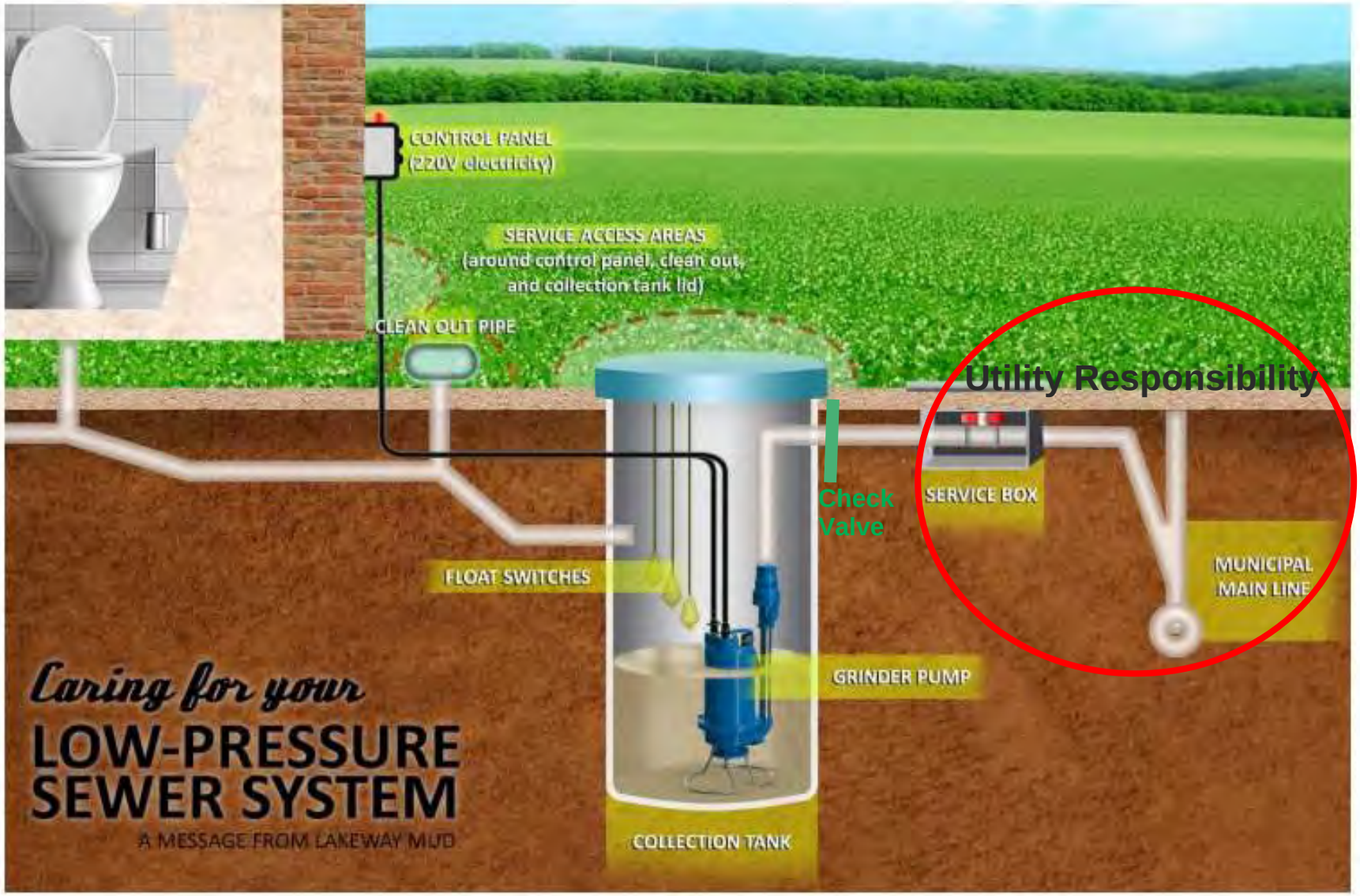
For more information, please contact Emily Long at 1-800-638-0262 or 570 Hallet Road, East Stroudsburg, PA 18301.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 3480024 Date distributed: Direct Mail with Annual 2020 CCR

CUPA Exhibit No. EL-2R


CONTROL PANEL
(220V electricity)
SERVICE ACCESS AREAS
(around control panel, clean out,
and collection tank lid)
CLEAN OUT PIPE
Utility Responsibility
Check
Valve
SERVICE BOX
FLOAT SWITCHES
MUNICIPAL
MAIN LINE
GRINDER PUMP
Caring for your
LOW-PRESSURE
SEWER SYSTEM
A MESSAGE FROM LAKEWAY MUD
COLLECTION TANK

CUPA Exhibit No. EL-3R

Questions

- Who is responsible for maintaining the water/sewer pipes? Not just providing service and charging for it, but actually inspecting, cleaning, and overall maintenancing our entire infrastructure? Utilities Inc. is responsible for the lift stations and collections system. The collections system consists of force main, low pressure main, and gravity main. For low pressure main our responsibility ends at the first curb stop before the grinder pump on the sewer lateral. For gravity, our responsibility ends at the customers property line of the sewer lateral.
- How often is everything maintenanced to prevent excessive buildup and narrowing of the sewer pipes? Lift stations are pumped down and cleaned annually and as needed. Electrical equipment is serviced and inspected annually and as needed. Tamiment has very few gravity mains. Utilities Inc. cleans and televises gravity mains about every 5 years, depending on the age and condition of the system. Force and low pressure mains cannot be cleaned and televised because of the nature of their design. When a blockage occurs, it is resolved through clean-out valves located throughout the system. A blockage would cause a break in the pipe.
- When was maintenance last completed? Do we have documented records to reference and can they be provided with the water quality reports? Lift stations were serviced in 2019 after we acquired the system. Gravity mains were cleaned in 2020. Maintenance records are updated with the Public Utility Commission (PUC) periodically. These records can be acquired by the public from the PUC. Water quality is not performed on wastewater in the collections system.
- The sewer lines don't work on gravity , they work on pressure. How do they ensure they are pumping proper pressure thru their lines without spiking? This depends on the type and brand of grinder pumps the customers install. The average running pressure of a grinder pump should be 60-70 PSI with a maximum running pressure of 120 PSI. If someone in the system installs a grinder pump with a higher running PSI, this will impact the PSI in the collections system which could impact their neighbors. Home elevation and lateral distance from home to collection system also impacts average PSI of the system. It is best for everyone to use the same grinder pump to ensure average 60-70 PSI is maintained. We recommend the Eone pump through ESC.
- Why are check valves/back flow preventers failing if proper P.S.I. is flowing through their systems? Check valves/back flow preventers eventually do fail. They do not last forever. There should be a check valve after the sewer curb stop and there should also be a check valve built into the grinder pump. We recommend back flow preventers be inspected every year. This is the responsibility of the home owner.
- Even installed brand new check valves are being compromised , how can an adjustment be made to avoid destroying even brand new check valves? Make sure the check valve valve is the correct type for a low pressure sewer application. The check valve could have been faulty or debris got stuck in it causing it to fail.
- Why are grinder pumps making noise if you haven't flushed your toilets or having water running? The pump is running for some reason. Call a plumber to have them investigate. If there is something wrong and the pump continuously runs it will break. Investigate what is triggering the pump to run such as a stuck float or bad control panel.
- How is it possible for the system to fail when nobody has been home to use it for a week? Causes could be: electrical surge, overtime the pump fails due to wear and tear, bad bearing, bad winding, grit, foreign objects, other underlining issue, pump is at it's end of life, etc.

CUPA Exhibit No. EL-4R

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Well 3 2019 electrical altered by Pennsylvania Utility Company operations

Tank 3 2019 electrical mouse nest

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP 2019

WWTP 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP 2019

WWTP 2021 new railing and walkways, new electrical, new splitter box, covered clarifiers

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP 2019

WWTP 2021

new electrical, new air blower

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

MCP Panel covered in bird fecal matter 2019

New Electrical 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP & MCP panel shows historical flooding 2019

WWTP 2021 new drainage in front of door and retaining wall to prevent water from entering the WWTP building

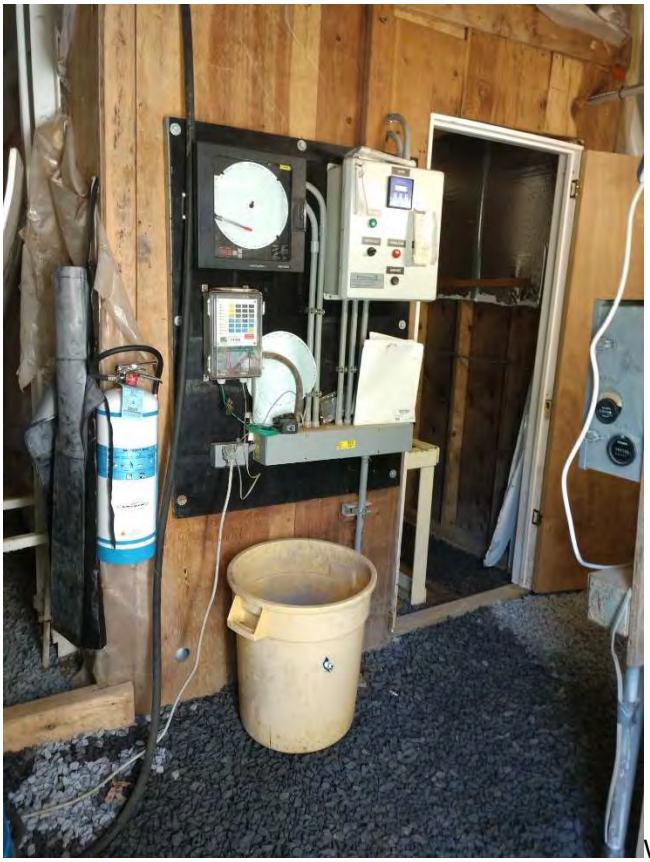
Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Lakeside Lift Station September 2019

Well 2 2019

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Well 1 treatment 2019


Well 1 treatment 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Failed clarifier 2019

Fixed 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Contractor emptying the warehouse 2019

Warehouse 2021 decluttered, new gravel, dead, trees removed, gutters fixed

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025206
Community Utilities of Pennsylvania Inc. – Water Division	:	
Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025207
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
EMILY LONG
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, Emily Long, hereby certify that I am the State Operations Manager of the Community Utilities of Pennsylvania Inc. ("CUPA") and that, in such capacity, I am providing testimony on CUPA's behalf.

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

For Community Utilities of Pennsylvania Inc. Water and Wastewater Divisions

- Rebuttal Testimony, CUPA Statement No. 7-R consisting of 28 pages of written testimony with accompanying exhibits including:
  - CUPA Exhibit No. EL-1R through EL-4R
- Rejoinder Testimony, CUPA W & WW Statement No. 7-RJ, consisting of 5 pages of written testimony.

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021

Emily Long

Emily Long
State Operations Manager
Community Utilities of Pennsylvania Inc.

CUPA STATEMENT NO. 8-R

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REBUTTAL TESTIMONY

OF

LAQUISHA M. PARKS

WATER & WASTEWATER DIVISION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is LaQuisha M. Parks and my business address is 4944 Parkway Plaza Boulevard, Charlotte, NC 28217.

Q. WHERE ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am Vice President of Customer Experience, US Operations for Corix Group of Companies ("Corix"), a position I have held since joining Corix in September 2020.

Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. I hold a Bachelor of Science degree in Engineering from North Carolina Agricultural and Technical State University and a Master of Science in Business from Pfeiffer University. I have over 18 years engineering, customer service and executive management experience, most of which was in the electric and gas industries, in various capacities. My positions have included Director of Duke Energy Corporation's Consumer Affairs department, Regional General Manager of Duke Energy Corporation's Customer Care Operations department, and General Manager of the Customer Operations department for Piedmont Natural Gas. I began my career in 1995 as an engineer for the United States Department of Energy, conducting energy audits for military facilities and naval ships.

Q. WHAT ARE YOUR DUTIES AS VICE PRESIDENT OF CUSTOMER EXPERIENCE OPERATIONS WITH CORIX?

A. I have overall responsibility for implementing cultural processes aligned with Corix's "customer intimacy" strategy for regulated utility operations. I am responsible for three contact centers in the states of North Carolina, Florida and

Illinois. I oversee all aspects of our Customer Experience Operations Department, from policy formation and implementation, performance standards, strategic objectives, to financial performance.

Q. DO YOUR DUTIES AS VICE PRESIDENT OF CUSTOMER EXPERIENCE EXTEND TO COMMUNITY UTILITIES OF PENNSYLVANIA, INCORPORATED ("CUPA")?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony responds to various statements about the quality of CUPA's customer service raised at the public input hearing. N.T. 74-76, 137-138, 191. My testimony also responds to Office of Consumer Advocate Witness Sherwood's suggestions that "CUPA should make changes to ensure that customers can easily reach the Company and get answers to their questions by phone." OCA St. No. 1 at 6. My testimony provides an overview of process and organizational changes recently implemented by Customer Experience Operations in order to improve service to our customers. The Customer Experience Operations Department was restructured in October 2020 in furtherance of Corix's strategic vision. The goal of the Customer Experience Operations Department is to enhance relationships with internal and external customers while delivering on Corix's overall strategy of increased customer service through ongoing and continuous improvement to customer care. The Customer Experience Operations team has worked to achieve this goal by clearly establishing the vision and mission of how Corix delivers excellent customer service, and by aligning certain internal operations of Corix to

incentivize improved service to customers of our utilities, such as CUPA. My testimony applies to both water and wastewater customer service.

Q. CAN YOU PLEASE SUMMARIZE THE VISION AND MISSION OF CUSTOMER EXPERIENCE OPERATIONS?

A. The vision of Customer Experience Operations is “CARE”: customer focused and caring; agile and accountable; respectful and responsive; and ease with which to do business. The Customer Experience Operation’s mission is “EASE”: effective the first time; appreciate the customer each time; safety all the time, and easy to do business with every time.

Q. HOW HAVE YOU WORKED TO ADVANCE THE VISION AND MISSION OF CORIX?

A. First, the Customer Experience Operations Team worked with the Corix corporate group to develop the vision and mission, and then announced it to the internal workforce. The purpose of this was to make clear the customer service expectations and align the organization and its customer service operations to meet the vision and mission. Relatedly, we formally rebranded the department as the Customer Experience Operations Team. We also aligned the responsibility of division of labor within the group and hired three new staff members in the Customer Experience Operations Team. Corix also created a new pay structure to reward more experienced employees. Culturally, we implemented an attendance merit program. This is a new system of accountability for our department which rewards employees for consistent attendance and great performance. The

purpose of this program is to drive positive behaviors, increase employee retention, and help build excellence in performance.

Q. WHAT OPERATIONAL CHANGES HAS THE CUSTOMER EXPERIENCE OPERATIONS TEAM MADE TO BETTER SERVE CUPA'S CUSTOMERS?

A. Operationally, we developed a regionalized support model to offer more localized customer expertise and support. Prior to this change, if a CUPA customer called seeking support, it was possible that the customer would be directed to a Corix customer support representative located in any given Corix location. In contrast, now a CUPA customer will be directed to a customer service representative responsible for customers in PA. We believe this change is a better model and provides improved customer service support for the current and future needs of our customers. A closer connection to the communities we serve will enable us to provide more informed and better care.

Q. HOW DOES THE CUSTOMER EXPERIENCE OPERATION TEAM ENSURE THE COMPANY'S STATED VISION AND MISSION ARE BEING MET?

A. Beginning in 2019, we implemented a process to obtain increased customer feedback by means of a survey. Specifically, at the conclusion of every call from a customer, the customer is prompted to complete a three-question Customer Satisfaction Survey ("CSS"). The CSS questions solicit feedback on the overall customer service provided to the customer, inquire as to whether the issue was resolved, and ask whether the customer was satisfied that the Company provided the effort and had the skills necessary to resolve the issue. The customer's responses to the CSS are used to develop an overall score which is evaluated by

the Customer Experience Operations Team. These scores and customer feedback are then used in coaching and training.

Q. PLEASE EXPOUND ON THE COACHING AND TRAINING MODEL YOU JUST MENTIONED.

A. We keep and evaluate the CSS responses and the metrics that are developed. Anything below a score of 90 triggers an evaluation of the call. To that end, the Customer Experience Operations Team listens to the call then engages in training with the employee and their supervisor. The purpose of this is to build and maintain high levels of service. We always follow up with a customer if a complaint is lodged, or a score is less than satisfactory, to seek a proactive resolution of the customer's issue. In addition, we implemented a new coaching model in December 2020 to ensure our Customer Experience Specialists ("CES") receive timely feedback on call quality and customer interactions that are not related to the survey. The model is a platform of a two-way communication, where the Supervisor and the Customer Experience Specialists listen to 2-3 calls/month and discuss opportunities for improvement and successes during the call. The calls are graded based on how well the CES handled the call. A score of 90 or above is the target. The coaching model ensures that each CES is knowledgeable about what they are trained to do and able to demonstrate that aptitude. The model is used to work on personal improvement on a one-on-one basis. We recently hired a full-time trainer to develop, plan, schedule, facilitate and lead internal "on-going" training programs across Customer Experience to develop our employees, ensure consistency, retain organizational knowledge, and develop soft skills. Through the

establishment of a training program, by fostering an environment that values continuous education and providing employees with the training resources needed for success, the Training Coordinator will reinforce our overall customer service strategy.

Q. HAS CUSTOMER SATISFACTION IMPROVED AS A RESULT OF THESE INITIATIVES?

A. Yes, and the data reflects that the Company's customer service efforts continue to be successful. The Company maintains overall metrics on the results of the CSS. As I mentioned, the target score on each question is 90, and as of mid-July 2021, the Company's overall score on each question met or surpassed the target number of 90. Additionally, each question of the CSS has either improved or maintained its score over the course of 2021. I would add that the percentage of calls answered within sixty seconds has increased over the course of 2021, and the abandonment rate of calls has decreased as noted in Parks Rebuttal Exhibit No. 1. All of these data points reflect positive customer service efforts by the Company.

Q. WHAT CUSTOMER EDUCATION AND OUTREACH EFFORTS HAS THE COMPANY MADE WITH ITS STAKEHOLDERS AND CUSTOMERS WITH REGARD TO THE COVID-19 EMERGENCY?

A. The Company took numerous actions to address the Covid-19 pandemic. Beginning in the spring of 2020, the Company sent weekly updates to our stakeholders. The Company complied with all orders from the Commission regarding COVID, including those related to suspension of disconnections, prohibition on utility shut-offs, late fees, reconnection fees, and related Executive

Orders. Similarly, the Company issued numerous press releases, social media posts, website posts and notices related to these same topics.

Q. DOES THE COMPANY PLAN TO MAKE ANY OUTREACH WITH RESPECT TO THE LOW-INCOME HOUSEHOLD WATER ASSISTANCE PROGRAM ("LIWHAP")?

A. Yes. It is my understanding that funds have been allocated to the state of Pennsylvania based on recent federal legislative action. At this point, it remains unclear as to how the LIWHAP program will work and how these state funds will be allocated, specifically. As such, we plan to contact the Department of Human Services/Bureau of Policy, Division of Federal Programs and Program Management to ensure our customers have the best possible access to these funds.

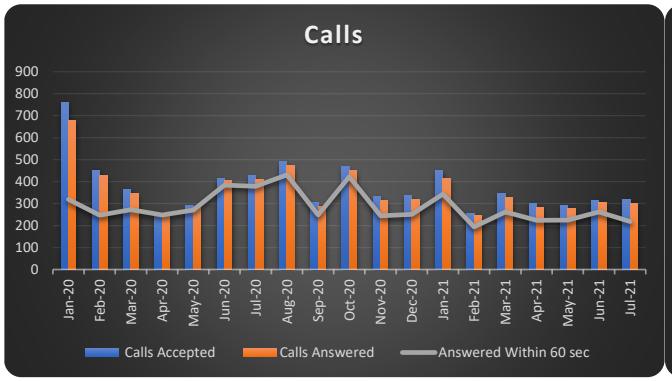
Q. DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL TESTIMONY?

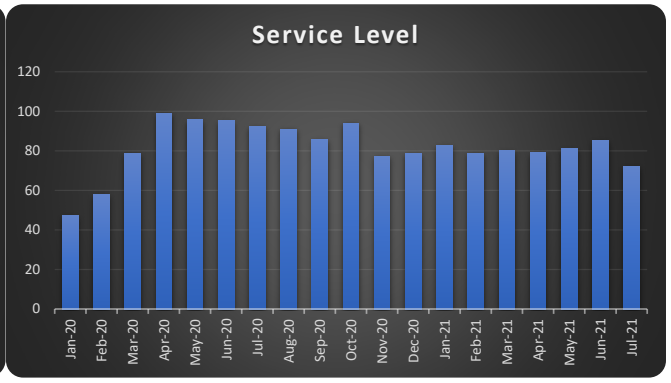
A. Yes, it does. However, I reserve the right to update or amend this testimony upon receipt of additional relevant data or other information that may become available.

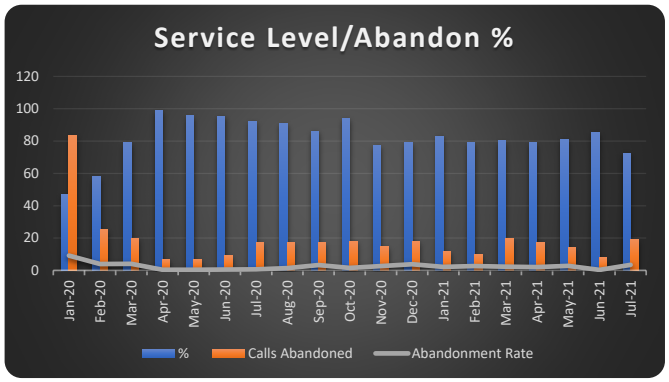
Parks Rebuttal Exhibit 1

Parks Rebuttal Exhibit 1

	Calls Accepted	Calls Answered	Answered Within 60 sec		%	Calls Abandoned	Abandonment Rate
Jan-20	763	678	319	Jan-20	47.05	84	9.17
Feb-20	452	427	247	Feb-20	57.85	25	3.98
Mar-20	365	345	272	Mar-20	78.84	20	4.11
Apr-20	257	250	248	Apr-20	99.2	7	0.39
May-20	290	283	271	May-20	95.76	7	0.34
Jun-20	412	403	384	Jun-20	95.29	9	0.49
Jul-20	426	409	379	Jul-20	92.67	17	0.7
Aug-20	490	473	431	Aug-20	91.12	17	1.43
Sep-20	305	288	248	Sep-20	86.11	17	3.28
Oct-20	467	449	423	Oct-20	94.21	18	1.5
Nov-20	331	316	244	Nov-20	77.22	15	2.72
Dec-20	336	318	251	Dec-20	78.93	18	3.87
Jan-21	450	414	343	Jan-21	82.85	12	2.22
Feb-21	256	246	194	Feb-21	78.86	10	2.73
Mar-21	347	327	262	Mar-21	80.12	20	2.31
Apr-21	301	283	224	Apr-21	79.15	17	1.99
May-21	291	277	225	May-21	81.23	14	2.75
Jun-21	314	306	262	Jun-21	85.62	8	0.32
Jul-21	320	301	218	Jul-21	72.43	19	3.44







BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025206
	:	
Community Utilities of Pennsylvania Inc. – Water Division	:	
	:	
Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025207
	:	
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
LAQUISHA M. PARKS
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, LaQuisha M. Parks, hereby certify that I am the Vice President of Customer Experience for the US Operations for Corix Group of Companies, and that, in such capacity, I have provided testimony behalf of the Community Utilities of Pennsylvania Inc. ("CUPA").

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

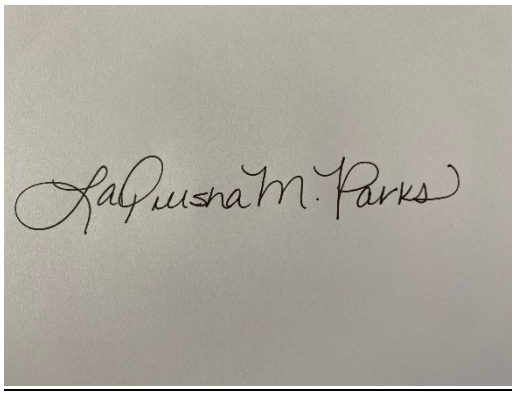
<u>For Community Utilities of Pennsylvania Inc. Water and Wastewater Divisions</u>

- Rebuttal Testimony, CUPA W Statement No. 8-R consisting of 8 pages of written testimony with accompanying exhibits:
    - Parks Rebuttal Exhibit 1

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if

I were asked the questions contained therein today that my answers would remain the same. I understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021



LaQuisha M. Parks
Vice President of Customer Experience for the US Operations
Corix Group of Companies

CUPA W STATEMENT NO. 9-R
August 27, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NOS. R-2021-3025206 AND R-2021-3025207

REBUTTAL TESTIMONY

OF

STEVEN M. LUBERTOZZI

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I. INTRODUCTION, PURPOSE, AND SUMMARY 1
II. TAMIMENT RATE BASE 2
III. RETURN ON EQUITY 4

I. INTRODUCTION, PURPOSE, AND SUMMARY

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is Steven M. Lubertozzi. I am the Senior Vice President, North Region for Corix Regulated Utilities U.S., Inc. ("CRUUS ") and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of CRUUS. My business address is 500 W, Monroe Ste 3600, Chicago, IL 60661.

Q. PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

A. As Senior Vice President, I am responsible for all aspects of the Company's business, culminating in the ongoing provision of safe drinking water and environmentally responsible wastewater service to all our customers.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I graduated from Indiana University in 1990, and I am a Certified Public Accountant. I earned my Masters of Business Administration from Northwestern University's Kellogg School of Management. I am a member of the American Institute of Certified Public Accountants, and I have been employed by Utilities, Inc. (now Corix Regulated Utilities (US) Inc.), the parent of USI, since June of 2001. I am a past Board Member of the National Association of Water Companies, I am a current Board Member of the Illinois Chapter of the National Association of Water Companies, and I am a current Board Member of the Financial Research Institute.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY OTHER PUBLIC UTILITY COMMISSION?

A. Yes. I have provided written testimony before public utilities commissions throughout the United States, including the Pennsylvania Utility Commission ("Commission"), on topics

ranging from cost of equity, capital structure, cost of debt, acquisition adjustments, divestment strategies, appropriate levels of operations and maintenance expense, parent company allocations, affiliate transactions, income taxes and most every aspect of utility operations. The other state commissions where I have presented testimony include Florida, Illinois, Indiana, Kentucky, Maryland, Nevada, New Jersey, New Mexico, North Carolina and South Carolina.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony will further address the Tamiment rate base determination and the Return on Equity recommendation. I am addressing both the water and wastewater divisions in this testimony.

II. <u>TAMIMENT RATE BASE</u>

Q. DID CUPA PREVIOUSLY PROVIDE TESTIMONY REGARDING TAMIMENT RATE BASE VALUATION?

A. Yes. Mr. Perry Brown's Direct Testimonies, CUPA W Statement No. 2 at 16-17; CUPA WW Statement No. 2 at 10-11. He provided the rate base value for both water and wastewater that the prior owner of the Tamiment utility, Pennsylvania Utility Company, Inc., (Pennsylvania Utility Company) provided and raised that the Commission has ordered the rate base for Tamiment be established in this proceeding. CUPA included the book value of the assets and associated depreciation based on a fixed asset schedule provided by Pennsylvania Utility Company at the time the acquisition was recorded.

Q. WHAT WERE THE VALUATIONS THE PRIOR OWNER PROVIDED?

A. For water: rate base value of $1,324,261, including plant balance of $2,212,733 and accumulated depreciation balance of $888,472 at the time of the acquisition.

For wastewater: rate base value of $1,683,056, including plant balance of $2,861,017, accumulated depreciation balance of $1,617,881, and a construction work in progress ("CWIP") balance of $439,920 at the time of the acquisition.

Mr. Brown provided a detailed breakdown of these values in CUPA W Exhibit PAB-2 and CUPA WW Exhibit PAB-2. This information is also provided below in a table summary format:

Description	UPIS	Accumulated Depreciation	CWIP	Total
Water	2,212,733	(888,472)	-	1,324,261
Wastewater	2,861,017	(1,617,881)	439,920	1,683,056
Total	**5,073,750**	**(2,506,354)**	**439,920**	**3,007,317**

Q. DOES CUPA AGREE THAT THE COMMISSION SHOULD DETERMINE THE RATE BASE FOR TAMIMENT TO BE THE VALUES REFLECTED ABOVE?

A. For water, yes. CUPA believes the $1,324,261 is an accurate reflection of the Tamiment rate base as of the time of purchase. However, for wastewater CUPA believes the CWIP balance of $439,920 should not be included in rate base, putting rate base determination at $1,243,135.

Q. WHY DOES CUPA BELIEVE THE CWIP BALANCE SHOULD NOT BE INCLUDED IN RATE BASE FOR WASTEWATER?

A. The CWIP balance of $439,920 is currently not in progress, will not be in progress during the future test period and will not be in service shortly after the future test period.[1] However, CUPA believes that these costs were prudently incurred by the prior owner and these costs are related to engineering studies and permitting work for potential upgrades to the wastewater

[1] *Pa. PUC v. City of Bethlehem – Water Department*, Docket Nos. R-2020-3020256 *et al.* 2021 WL 1534307 Opinion and Order at *26 (Order entered Apr. 15, 2021) ("as the ALJ found, the Commission may allow claimed expenditures to undertake construction for plant that will not be completed, i.e., used and useful at the end of the FYT, in rate base. However, in those circumstances, construction of the specific project has been required to be "in progress" (construction work in progress) during the FTY, and "in service" shortly thereafter.").

facilities. Because CUPA believes the prior owner prudently incurred these costs to assess and perform due diligence to evaluate what projects should be considered. There are no projects currently in progress, no projects will be in progress during the future test period, and no projects will be in service shortly after the future test period, and therefore, CUPA instead proposes to amortize this balance over 11 years.

Q. WHAT IS CUPA'S FINAL RATE BASE RECOMMENDATION THAT IS REQUIRED PURSUANT TO DOCKET NOS. A-2018-3005430 AND A-2018-3005432 AFTER YOU ADJUST FOR THE CWIP PREVIOUSLY DISCUSSED?

A. CUPA final rate base recommendation is as follows:

Description	UPIS	Accumulated Depreciation	CWIP	Rate Base
Water	2,212,733	(888,472)	-	1,324,261
Wastewater	2,861,017	(1,617,881)	-	1,243,135
Total	**5,073,750**	**(2,506,354)**	**-**	**2,567,397**

Q. HOW DOES CUPA PROPOSE TO AMORTIZE THIS BALANCE?

A. CUPA has reflected this amortization in CUPA WW Statement No. 3-R (Page3).

Q. IF THIS BALANCE IS AMORTIZED, WILL CUPA SEEK TO RECOVER THIS MONEY BACK FROM THE SELLER?

A. No.

III. RETURN ON EQUITY

Q. Do you have any comments related to the Return on Equity recommendation of 0%?

A. Yes, the capital markets would have a negative reaction, and, in my opinion, would be hesitant to invest in Pennsylvania. Capital goes where it is welcome and stays where it is well treated. Investors will decline to invest in similarly situated assets, if there is significant risk of

having their capital confiscated. The capital market would view this as a taking. I have been to lender presentations and discussed equity infusions with investors, so I know what my advice would be to lenders and investors – deploy your capital outside the Commonwealth of Pennsylvania, if the 0% Return on Equity was approved. Again, in my opinion this would be considered a taking and confiscation of an investor's capital, and regardless of whether it is legal or not, that would send shockwaves through the investment and utility community and potentially discourage infrastructure investment in the Commonwealth of Pennsylvania.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025206
	:	
Community Utilities of Pennsylvania Inc. – Water Division	:	
	:	
Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3025207
	:	
Community Utilities of Pennsylvania Inc. – Wastewater Division	:	

TESTIMONY VERIFICATION OF
STEVEN M. LUBERTOZZI
ON BEHALF OF
COMMUNITY UTILITIES OF PENNSYLVANIA INC.

I, Steven M. Lubertozzi, hereby certify that I am the Senior Vice President, North Region, for Corix Regulated Utilities U.S., Inc., and that, in such capacity, I have provided testimony behalf of the Community Utilities of Pennsylvania Inc. ("CUPA").

I hereby verify that I have provided the following written Testimony for admission into the record and that these documents were prepared by me and under my supervision:

For Community Utilities of Pennsylvania Inc. Water and Wastewater Divisions

- Rebuttal Testimony, CUPA Statement No. 9-R consisting of 6 pages of written testimony

I certify that the facts set forth in the testimony (with the corrections noted on the attached Errata statement) are true and correct to the best of my knowledge, information and belief; that if I were asked the questions contained therein today that my answers would remain the same. I

understand that the statements made in my testimony are subject to the penalties at 18 Pa C.S. § 4909 related to the unsworn falsification to authorities.

Dated: September 7, 2021

Steven M. Lubertozzi
Senior Vice President, North Region
Corix Regulated Utilities U.S., Inc.

OCA STATEMENT 3R

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket Nos. R-2021-3025206
	)	R-2021-3125207
Community Utilities of Pennsylvania, Inc.	)	

REBUTTAL TESTIMONY
OF
JEROME D. MIERZWA

ON BEHALF OF
THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 27, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN THIS PROCEEDING?

A. Yes. My direct testimony was submitted as OCA Statement 3 on August 13, 2021. My direct testimony addressed the water and wastewater cost of service ("COS") studies and rate design proposals presented by Community Utilities of Pennsylvania, Inc. ("CUPA" or "Company").

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to the water and wastewater service rate design recommendations presented by Esyan A. Sakaya on behalf of the Bureau of Investigation and Enforcement ("I&E") and Brian Kalcic on behalf of the Office of Small Business Advocate ("OSBA").

II. WATER RATE DESIGN

Witness: Esyan A. Sakaya

Q. PLEASE SUMMARIZE THE WATER SERVICE RATE DESIGN PROPOSALS PRESENTED BY MR. SAKAYA.

A. Mr. Sakaya claims that the Westgate Public Fire Protection charge, the Tamiment 6-inch customer charge, and the Tamiment availability charge proposed by CUPA are

too high, and recommends that these charges be reduced. He also recommends that the proposed low-income usage rate not be implemented.

Q. WHAT IS MR. SAKAYA'S PROPOSAL CONCERNING THE WESTGATE PUBLIC FIRE PROTECTION CHARGE?

A. Mr. Sakaya finds CUPA's proposal to increase the rate from $32.18 per month to $118.73 per month, or 269 percent, to be inconsistent with the concept of gradualism. Mr. Sakaya recommends that the Public Fire Protection rate be increased to $44.00, or by 36.7 percent, which is the overall system average increase proposed by the Company.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S PUBLIC FIRE PROTECTION RATE PROPOSAL?

A. As indicated in my direct testimony, to be consistent with Section 1328 of the Public Utility Code, the Company will be revising its proposed rates in rebuttal testimony to limit the increase to Public Fire Protection to 25 percent of the cost of service.[1] This may further limit the increase to Public Fire Protection rates. While there is no hard and fast rule, generally, a limit of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. Therefore, subject to the limitations of Section 1328, I recommend that Public Fire Protection rates be increased by 1.5 times the system average increase authorized by the Commission in this proceeding.

Q. WHAT IS MR. SAKAYA'S PROPOSAL CONCERNING THE TAMIMENT 6-INCH CUSTOMER CHARGE?

[1] CUPA response to OSBA Interrogatory Set 1, No. 2.

A. Mr. Sakaya finds CUPA's proposal to increase the charge from $121.25 per month to $873.09 per month, or 620 percent, to be inconsistent with the concept of gradualism. Mr. Sakaya recommends that the 6-inch customer charge be increased to $166.00, or 36.9 percent, which is also consistent with the system average increase proposed by the Company.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S 6-INCH CUSTOMER CHARGE PROPOSAL?

A. In my direct testimony, I recommended that all customer charges be maintained because the present charges already exceeded the cost-based rates identified on page 16 of CUPA Exhibit SAM-1. Upon further review of Exhibit SAM-1, I note that the 6-inch customer charge is actually less than the cost of service rate of $370.45. Therefore, I do not oppose Mr. Sakaya's recommendation.

Q. WHAT IS MR. SAKAYA'S PROPOSAL CONCERNING THE TAMIMENT AVAILABILITY CHARGE?

A. Mr. Sakaya finds CUPA's proposal to increase the current availability charge of $19.14 per quarter to $15.32 per month, or 142 percent, to be inconsistent with the concept of gradualism. Mr. Sakaya is proposing a Tamiment availability charge of $8.70 per month, or 37.4 percent, which is comparable to the system average increase proposed by the Company.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S TAMIMENT AVAILABILITY CHARGE PROPOSAL?

A. CUPA is proposing to decrease the Consolidated service territory availability charge. As noted in my direct testimony, I do not believe a rate decrease is appropriate when overall rates are increasing. Therefore, I recommended that the Consolidated service

territory availability charge be maintained. As noted by Mr. Sakaya, CUPA is proposing an increase in the Tamiment service territory availability charge of 142 percent. To provide for gradualism and to move toward eventual consolidation of availability charges, an increase of 1.5 times the system average increase in the Tamiment service territory availability charge would be reasonable. The additional revenue from not reducing the availability charge in the Consolidated service territory will help to offset the reduced increase to the Tamiment availability charge.

Q. WHY DOES MR. SAKAYA DISAGREE WITH THE COMPANY'S PROPOSAL TO IMPLEMENT A LOW-INCOME USAGE RATE?

A. Mr. Sakaya recommends that CUPA's proposed low-income usage charge not be implemented because it would increase the usage charge for other customers. He also believes that the usage charge discount is too large.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S RECOMMENDATION THAT THE LOW-INCOME USAGE CHARGE NOT BE IMPLEMENTED?

A. Bill affordability is a significant concern, particularly given the magnitude of CUPA's proposed increases to water and wastewater bills and the timing, during an ongoing pandemic. This concern is raised in the direct testimony of OCA witness Sherwood, CUPA witness Dickson, OSBA witness Kalcic and I&E witness Keller.[2] The proposed low-income rate usage rate would help to make bills more affordable and mitigate the impact of the increase. As Mr. Sakaya noted, other water utilities have a customer assistance program in place. In response to Mr. Sakaya's concern that the discount is too large, I repeat the recommendation in my direct testimony that the program should

[2] OCA Statement 1 at 4-7; CUPA Statement 3W at 5-8; OSBA Statement 4-5. I&E witness Keller also recognized that "Virtually every customer testified about the affordability of the rate increase, especially when combined with the impact of COVID-19." I&E Statement 2 at 20.

be approved on a pilot basis so that it can be evaluated and changed in the next base rate case as appropriate, after some experience.

III. WATER RATE DESIGN

Witness: Brian Kalcic

Q. WHAT IS MR. KALCIC'S CONCERN WITH CUPA'S PROPOSED INCREASES TO THE FIXED MONTHLY CHARGES AND CONSUMPTION CHARGES?

A. In this proceeding, CUPA is proposing to increase fixed charge revenues (i.e., monthly customer charges and availability charges) by a greater percentage than consumption charge revenues. Mr. Kalcic claims that this is unreasonable because the Company's proposal is not cost-based.

Q. WHAT DOES MR. KALCIC RECOMMEND?

A. Mr. Kalcic recommends that the Commission direct CUPA to assign a uniform percentage increase to (i) fixed monthly customer charges and availability charges; and (ii) overall consumption charge revenues.

Q. DO YOU AGREE WITH MR. KALCIC'S RECOMMENDATION?

A. No. As explained in my direct testimony and in responding to Mr. Sakaya, above, CUPA's fixed monthly customer charges should not be increased because the current charges already exceed the indicated cost of service charges. Availability charges should be increased as recommended in my direct testimony and for the reasons I presented in responding to Mr. Sakaya's availability charge proposal.

Q. IS MR. KALCIC IN AGREEMENT WITH THE COMPANY'S PROPOSAL TO CONSOLIDATE ITS TAMIMENT AND CONSOLIDATED SERVICE TERRITORY RATES AT THE CONCLUSION OF THIS PROCEEDING?

A. No. At the Company's requested revenue increase, Tamiment customers would experience a rate increase of 80 percent if rates were consolidated. In order to mitigate the rate impacts on Tamiment system customers in this proceeding, Mr. Kalcic recommends that the Commission direct CUPA to (i) consolidate (only) the customer charges and availability charges paid by customers in the Tamiment and Consolidated rate areas; and (ii) eliminate one-half of the existing difference in consumption charges of $4.15 per thousand gallons across the two rate areas. He recommends that further consolidation of Tamiment system rates should be addressed in CUPA's next rate case.

Q. WHAT IS YOUR RESPONSE TO MR. KALCIC'S RATE CONSOLIDATION PROPOSAL?

A. First, it is not clear that Mr. Kalcic's rate consolidation proposal can be adopted in conjunction with his proposal to assign a uniform percentage increase to (i) fixed monthly customer charges and availability charges; and (ii) overall consumption charge revenues. Second, adopting Mr. Kalcic's proposal would result in an increase in fixed monthly customer charges. As just explained, fixed monthly customer charges should not be increased because the current charges already exceed the indicated cost of service charges. Third, with respect to the consolidation of availability charges, as noted in responding to Mr. Sakaya, consolidation would likely require a decrease in the Consolidated service territory charge and a significant increase in the Tamiment availability charge which is inconsistent with the concept of gradualism. Individual rates should not be decreased when overall rates are increasing. Finally, on a stand-alone basis, Mr. Kalcic's proposal to eliminate one-half of the existing difference in consumption charges in this proceeding and address further consolidation in CUPA's next proceeding is not unreasonable.

IV. WASTEWATER RATE DESIGN

Witness: Esyan A. Sakaya

Q. DID MR. SAKAYA FIND ANY CONCERNS WITH THE COMPANY'S WASTEWATER SERVICE RATE DESIGN PROPOSALS?

A. Yes. CUPA has proposed to increase the availability charge for Tamiment customers from $22.90 per quarter, which is equivalent to $7.63 per month, to $22.91 per month, or by 200 percent. Mr. Sakaya found this proposal to be inconsistent the concept of gradualism. Mr. Sakaya recommends that the availability charge for both the Consolidated and Tamiment service territories be set at $11.00 per month.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S AVAILABILITY CHARGE PROPOSAL?

A. Under Mr. Sakaya's proposal, the availability rate for the Consolidated service territory would decrease from $13.12 to $11.00 per month. As explained earlier in my testimony concerning Mr. Sakaya's Tamiment water service availability charge proposal, I do not believe it appropriate to decrease rates when overall rates are increasing. With respect to the Tamiment wastewater availability charge, I continue to recommend that the charge be moved halfway toward the consolidated charge approved by the Commission in this proceeding.

V. WASTEWATER RATE DESIGN

Witness: Brian Kalcic

Q. DOES MR. KALCIC FAVOR THE CONSOLIDATION OF TAMIMENT AND CONSOLIDATED SERVICE TERRITORY RATES IN THIS PROCEEDING?

A. No. Mr. Kalcic finds that wastewater rate consolidation would favor Tamiment system customers since Tamiment wastewater rates are generally higher than CUPA's

Consolidated service territory rates. In order to mitigate the rate impacts on Consolidated system customers and to be consistent with his recommendation with respect to *not* fully consolidating water rates, Mr. Kalcic recommends that CUPA target its Tamiment system customers with an overall increase of approximately 0.75 times the system average increase. Mr. Kalcic recommends that further consolidation of Tamiment system wastewater rates should be addressed in CUPA's next rate case.

Q. WHAT IS YOUR RESPONSE TO MR. KALCIC'S PROPOSAL TO DELAY CONSOLIDATION OF WASTEWATER SERVICE RATES?

A. Mr. Kalcic's recommendation is in response to CUPA's proposal to consolidate rates by converting Tamiment customers from the current system of a fixed charge and a volumetric charge usage charge to only a fixed charge (flat rates). In my direct testimony, I recommended that the current system of fixed and usage charges be maintained for the Tamiment service territory and that in CUPA's next rate case, customers in the Consolidated service territory which are only assessed a flat rate be converted to a system of fixed and usage charges. Provided this recommendation is adopted, Mr. Kalcic's proposal is not unreasonable.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts set forth in my Rebuttal Testimony, OCA Statement 3R, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 27, 2021
*316423

Signature: Jerome D. Mierzwa

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
v.	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
and	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

SURREBUTTAL TESTIMONY OF

STACY L. SHERWOOD

ON BEHALF OF THE
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

September 3, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway Suite 300
Columbia, Maryland 21044

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APPENDIX A: SURREBUTTAL SCHEDULES

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Stacy L. Sherwood. I am an Economist with Exeter Associates, Inc. ("Exeter"). Our offices are located at 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter is a firm of consulting economists specializing in issues pertaining to public utilities.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?

A. Yes. I previously submitted direct testimony on behalf of the Pennsylvania Office of Consumer Advocate ("OCA"). My qualifications and experience are set forth in that testimony.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to certain arguments presented in the rebuttal testimonies submitted by Community Utilities of Pennsylvania Inc. ("CUPA" or "Company") for both water and wastewater services. In particular, I am responding to witnesses Perry Brown, David Clark, and LaQuisha Parks related to my direct testimony filed in this case.

Q. PLEASE DISCUSS THE OCA'S REVISED POSITION FOR THIS CASE.

A. As stated below in this testimony, I have accepted some of the positions of CUPA and have detailed my objections or recommendations to others. As a result of the recommendations outlined in this testimony, accompanied by the recommendations of the other OCA witnesses, my revised position is to recommend an overall revenue requirement increase to water customers of $607,708 and to wastewater customers of $682,198, which is reflected on Schedule SLS-1SR and Schedule SLS-4SR, respectively. This recommendation for water customers is $146,211 less than the

increase of $753,939 that CUPA requested in its rebuttal and for wastewater customers is $312,255 less than the increase of $994,453 that CUPA requested in its rebuttal. It should be noted that this recommendation does not take into account the affordability, gradualism/rate shock, and adequacy of service issues highlighted in my direct testimony and that of OCA witness Mierzwa.

II. ACCEPTED ADJUSTMENTS

Q. DID CUPA ACCEPT ANY OF YOUR RECOMMENDED ADJUSTMENTS?

A. Yes. The Company accepted my recommendation to remove the merit increases for vacant positions, in the amount of $1,205 for water and $1,426 for wastewater, from salaries expense. This adjustment is already reflected in my schedule as part of a larger adjustment for the salaries and benefits, which is shown in Schedule SLS-7SR.

Q. DID THE COMPANY ACCEPT ANY ADJUSTMENTS FROM OTHER PARTIES?

A. Yes. The Company accepted the following adjustments, which are reflected in my schedules as well:

- Forfeited discounts to reflect same percentage approved by the Commission (reflected on Schedules SLS-1SR and SLS-4SR);
- Adjust rate base to properly reflect the net book value of Penn Estates meter (reflected on Schedule SLS-3SR); and
- Adjustment to remove Tamiment CWIP – Wastewater (reflected on Schedule SLS-6SR).

III. RATE CASE EXPENSE

Q. DID CUPA ACCEPT YOUR RECOMMENDATION TO NORMALIZE RATHER THAN AMORTIZE THE RATE CASE EXPENSE?

A. Yes. CUPA did accept my recommendation to normalize the rate case expense.

Q. OVER WHAT PERIOD DOES CUPA PROPOSE TO NORMALIZE THE RATE CASE EXPENSE?

A. CUPA proposes to normalize the rate case expense over three years. However, I would like to note that in response to I&E-RE-2 CUPA 2021 Consolidated RC Section 2, Supporting Schedule No. 8, the Company amortized the expense over four years.

Q. DO YOU AGREE WITH CUPA'S POSITION?

A. No, I do not. As noted in my direct testimony, CUPA has historically filed rate cases an average of every 4.6 years. There is Commission precedent supporting the normalization of rate case expense over the average timeframe the utility has historically filed rate cases. If the Company files its next rate case sooner than four years, its historic average will change accordingly. Therefore, I maintain my recommendation that the rate case expenses should be normalized over a period of four years, instead of three, as proposed by CUPA. This is reflected on Schedule SLS-1SR. Additionally, I continue to recommend that CUPA update its actual rate case expense to date as part of its rejoinder testimony so that the final amount to be normalized will reflect primarily actual expenses rather than projected expenses.

IV. SALARIES

Q. WOULD YOU LIKE TO ADDRESS THE RECOMMENDED ADJUSTMENT FOR SALARIES MADE IN YOUR DIRECT TESTIMONY?

A. Yes. After further review of Schedule SLS-7 in my direct testimony, I noted that an incorrect value was reported on line 9, FPFTY Salaries Per Company. Originally the value on line 9 was $1,053,335; however, it should have been $951,113. This has been corrected and reflected on Schedule SLS-7SR. As a result of that correction, my direct testimony position on revenue requirements changed to $593,897 from $547,120 for water and to $701,786 from $645,820 for wastewater.

Q. DID CUPA ACCEPT YOUR PROPOSED ADJUSTMENT TO ONLY INCREASE SALARIES BY 3 PERCENT IN THE FPFTY?

A. No. The Company claims that the approach is not reasonable because there is no data to support my position. Furthermore, the Company provided information showing that over the last four years, the actual annual merit increases exceeded the 3 percent that I have recommended be utilized.

Q. DO YOU ACCEPT THE COMPANY'S EVIDENCE TO SUPPORT UTILIZING A 4 PERCENT MERIT INCREASE?

A. No, I do not. As noted in the response, I&E-RE-6-D, the Company aims to maintain salary increases of 3 to 4 percent. Additionally, the Company stated that the variance from that policy is due to exceptions for merit increases and promotions. In prior rate cases, the 3 percent salary increase, per the Company's policy, was utilized to determine salary increases. Merit increases and promotions are based on a manager's discretion and therefore, are not known and measurable and should not be accounted for in the FPFTY. Furthermore, CUPA recognized that overtime can contribute to higher salary expenses. As such, it is possible that the higher percentage increases over the past 4 years could be related to overtime or managerial decisions.

The Commission should adopt a conservative approach of a 3 percent salary increase, which has historically been allowed for CUPA, especially given the current

financial hardships experienced by ratepayers due to the COVID-19 pandemic. Additionally, the historical increases above 3 percent were at the discretion of the Company despite knowing what had been authorized as part of its approved revenue requirement. As such, I maintain my adjustment to salaries and benefits stated in my direct testimony.

V. ENGINEERING EXPENSE

Q. DID CUPA ACCEPT YOUR ADJUSTMENT TO ENGINEERING EXPENSE?

A. Not entirely. In rebuttal, Mr. Clark agreed to utilize the same methodology to normalize expenses as I proposed, with irregular expenses allocated over five years. However, Mr. Clark indicated that a two-year average, instead of a three-year average as I proposed, should be used for engineering expense. Mr. Clark stated that a two-year average would more reasonably represent ongoing annual expenses as it allows for the accurate accounting of the Tamiment acquisition.

Q. WHAT IS THE COMPANY'S REBUTTAL POSITION FOR ENEGINEERING EXPENSE?

A. Mr. Clark stated that the Company would not object to normalizing irregular expenses over five years and utilizing a two-year average (2019 and 2020) for ongoing-average expenses. Utilizing this methodology, the Company adjusted the Engineering Expense by $1,795 for water and by $2,126 for wastewater.

Q. DO YOU AGREE WITH MR. CLARK'S COMPROMISE?

A. Yes. I accept the Company's proposal to utilize a two-year average for ongoing annual expenses as a reasonable means to reflect expenses related to the Tamiment acquisition. The adjustment is reflected in Schedules SLS-1SR and SLS-4SR.

VI. CHEMICAL EXPENSE

Q. DID CUPA ACCEPT YOUR ADJUSTMENT TO CHEMICAL EXPENSE?

A. No. First, Mr. Clark rejected my adjustment to Chemical Expense because it was based upon the normalization of historical data, which "the Company does not believe…is consistent with the purpose of a fully projected future test year."[1] Second, Mr. Clark noted that I used the incorrect historical cost for the HTY.

Q. DO YOU AGREE WITH MR. CLARK'S ARGUMENT?

A. First, I do accept that the incorrect expense was used to represent the HTY expense. However, while I recognize that error, I do not agree with the Company's argument that normalizing expenses when utilizing a FPFTY is not appropriate. Per *A Guide to Utility Ratemaking*, "historical accounting data is annualized and normalized in a rate case to more accurately forecast the future."[2] Additionally, "Historic data is still required to be submitted to validate the fully projected future test year."[3] Through interrogatories I&E-RE-12-D and OCA-II-8, parties in the case sought to obtain information supporting the claimed 45% increase in chemical expenses over HTY expense levels. However, the Company did not provide any evidence to support cost increases or an increase in chemicals. Rather than providing recent invoices, the Company relies on its "estimated chemical costs" that do not have any supporting documentation.[4] Furthermore, the Company states in response to I&E-RE-12-D that it forecasts chemical costs based upon historical levels of chemical costs. This suggests that the Company agrees with the methodology utilized for my recommended adjustment.

[1] Rebuttal Testimony of David Clark, p 9, lines 8-9.
[2] "A Guide to Utility Ratemaking," James H. Cawley and Norman J. Kennard, 2018 Edition, https://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf, p. 83.
[3] Ibid, p. 88.
[4] Company response to I&E-RE-12-D.

Q. PLEASE DETAIL YOUR SURREBUTTAL POSITION ADJUSTMENT FOR CHEMICAL EXPENSE.

A. The onus to support the FPFTY claim is on the Company. In this instance, the Company has not provided supporting documentation for its proposed level of increase in chemical expense. Therefore, I maintain that the chemical expense should be based upon the three-year historical average of chemicals.

Due to the variance in chemical expenses from year to year, utilizing the average does take into account the acquisition of Tamiment, as Other Chemical and Odor chemical expenses in the HTY are lower than those experienced in other years observed.

In recognition that the input for the HTY chemical expense that I used in direct testimony was not correct, I have updated my adjustment for Chemical expense to reflect the correct amount for HTY, as shown in Schedules SLS-1SR, SLS-4SR, and SLS-7SR. As a result, my recommended Chemical expense adjustment matches the adjustment provided by I&E witness Walker.

VII. TESTING, METER READING, AND MISCELLANEOUS EXPENSE

Q. DID CUPA ACCEPT YOUR RECOMMENDED ADJUSTMENT TO TESTING, METER READING, AND MISCELLANEOUS EXPENSE?

A. No. Mr. Clark indicated in his rebuttal testimony that utilizing historical costs is a "backward-looking approach, which will not allow the utility to recover its costs and is inconsistent with the General Assembly's future test year concept."[5] Additionally, Mr. Clark argued that the 3-year normalization of historical cost does not consider the Tamiment acquisition.

[5] Rebuttal Testimony of David Clark, p 13, lines 18-20.

Q. DO YOU AGREE WITH THE COMPANY'S REBUTTAL POSITION?

A. No, I do not. As noted in the prior section of this testimony, *A Guide to Utility Ratemaking* highlights the importance that historical data plays in the development of the FPFTY. Furthermore, the onus is on the Company to provide supporting evidence that the costs will increase and that the increases are based on known and measurable changes in expenses; however, the Company has not provided support for the increase in expenses from historical levels, such as Test – Sewer expense, which it seeks to increase from $12,201 in the HTY to $43,519 in the FPFTY. Without evidence to support the increase in expense claims for the FPFTY from historical levels, at the very least from the HTY which does account for the Tamiment acquisition, the increase should not be granted. Therefore, I maintain the adjustment for Testing, Meter Reading, and Miscellaneous expense as detailed in my direct testimony, as shown on Schedule SLS-10.

VIII. MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE

Q. DID CUPA ADDRESS YOUR CONCERNS ABOUT POTENTIAL DOUBLE COUNTING OF SLUDGE REMOVAL IN ITS MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE IN REBUTTAL?

A. Yes. In the Rebuttal Testimony of David Clark (Wastewater), it was explained that while the sludge hauling expense was inadvertently included as part of the Materials, Supplies, and Other Maintenance expense, it was not doubled counted.

Q. DO YOU MAINTAIN YOUR RECOMMENDED ADJUSTMENT FOR THE MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE MADE IN YOUR DIRECT TESTIMONY?

A. No. As the Company has demonstrated that it is a valid expense, which is not being double counted under another expense category, I have removed the adjustment to this account in the amount of $30,409. As noted on Schedule SLS-4S, no adjustment is made to this Materials, Supplies, and Other Maintenance expense.

IV. RATE BASE

Q. DID CUPA ACCEPT YOUR ADJUSTMENTS TO REDUCE THE UTILITY PLANT AND ASSOCIATED CHANGES TO ACCUMULATED DEPRECIATION AND DEPRECIATION ADJUSTMENT?

A. No. The Company argues in Mr. Clark's rebuttal testimony that the level of capital is based on actual historical average spending and that CUPA "has every intention of investing this level of capital spending within the rate year."[6]

Q. DO YOU AGREE WITH MR. CLARK'S REBUTTAL POSITION ON YOUR RATE BASE ADJUSTMENT?

A. No. The Company mischaracterized my adjustment to rate base as based on personal opinion rather than specific statutory requirements and ratemaking practice. As stated in 66 Pa. C.S. § 315(e), in using a FPFTY the utility must provide "appropriate data evidencing the accuracy of the estimates contained in the future test year or a fully projected test year." The Company has failed to provide evidence to support capital improvements that will be added to rate base, nor did it provide start or end dates for the capital improvements. While historically the Company may have added to the rate base in these accounts, CUPA does not know what capital improvements will be made going forward. Had the Company been able to detail the capital projects that will result in the rate base increasing, it may have been reasonable to include these increases to

[6] Rebuttal Testimony of David Clark, p 4, lines 2-3.

rate base. However, the proposed changes to the rate base in the FTY and FPFTY identified in my direst testimony are not known and measurable. The Company is responsible for providing the supporting evidence for its claim to increase rate base and in the instances detailed in my direct testimony, has not done so. As such, ratepayers should not be responsible for a potentially inflated rate base to increase the Company's return when there is the real possibility that such improvements will not occur.

Q. PLEASE DETAIL YOUR SURREBUTTAL POSITION ADJUSTMENTS TO RATE BASE.

A. I propose no adjustments to my direct testimony position for rate base, beyond that of the accepted adjustment for the Penn Estates Meters that I adopted as part of my Schedule SLS-3SR.

V. CUSTOMER SERVICE

Q. IN DIRECT TESTIMONY, YOU RECOMMENDED THAT CUPA SHOULD MAKE CHANGES TO ENSURE THAT CUSTOMERS CAN EASILY REACH THE COMPANY AND GET ANSWERS TO THEIR QUESTIONS BY PHONE. HOW DID CUPA RESPOND?

A. In CUPA Statement No. 8-R Ms. Parks provided information about the Company's efforts to improve customers' service in 2020 and 2021. Of note, now CUPA customers are directed to a customer service representative responsible for customers in Pennsylvania; prior to that change, the customer might have been directed to a representative located in any Corix location. As part of its next rate case filing, I recommend that CUPA provide information regarding the Corix call center

performance to Pennsylvania customers, similar to the metrics provided in the rebuttal testimony.

Q. PLEASE DETAIL YOUR SURREBUTTAL SCEHDULES.

A. I have included Schedules SLS-1S through SLS-6S and SLS-11S through SLS-14S. Each of those details the following:

- Schedule SLS-1SR: Summary of Operating Income (Water);
- Schedule SLS-2SR: Summary of Operating Income (Water);
- Schedule SLS-3SR: Adjustment of Rate Base (Water);
- Schedule SLS-4SR: Summary of Operating Income (Wastewater);
- Schedule SLS-5SR: Summary of Operating Income (Wastewater);
- Schedule SLS-6SR: Adjustment of Rate Base (Wastewater);
- Schedule SLS-7SR: Adjustment to Salaries & Wages – Employees and Employee Pension and Benefits
- Schedule SLS-8SR: Adjustment for Chemical Expense
- Schedule SLS-11SR: Adjustments to Taxes Other than Income;
- Schedule SLS-12SR: Cash Working Capital Adjustment;
- Schedule SLS-13SR: Adjustment to Allowance for Uncollectible Accounts; and
- Schedule SLS-14SR: Adjustment to Federal and State Taxes.

Q. DOES THIS COMPLETE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

APPENDIX A

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
	)	
v.	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
	)	
and	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

SCHEDULES ACCOMPANYING THE

SURREBUTTAL TESTIMONY

OF

STACY L. SHERWOOD

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

September 3, 2021

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Volumetric Revenue					
3	Residential	$ 1,312,552		$ 1,312,552		$ 1,312,552
4	Commercial	18,296		18,296		18,296
5	Flat/Base Rate Revenue					
6	Residential	687,585		687,585		687,585
7	Commercial	17,562		17,562		17,562
8	Availability	35,394		35,394		35,394
9	Fire Hydrant	24,831		24,831		24,831
10	Other Operating Revenues					
11	Forfeited Discounts	(1,407)	$ 3,710	2,303		2,303
12	Miscellaneous Service Revenues	4,905	(1,095)	3,810		3,810
13	Purchased Services	-	-	-		-
14	Accruals	(56,290)	56,290	-		-
15	Gross Operating Revenues	2,043,428		2,102,333	607,708	2,710,041
16	Allowance for Uncollectible Accounts	(17,369) (1)		(17,369)	(2,619)	(19,988)
17	Net Operating Revenues	$ 2,026,059	$ 58,905	$ 2,084,964	$ 610,327	$ 2,695,291
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	396,201	(7,497)	388,704		388,704
21	Employee Pensions & Benefits	111,990	(6,359)	105,631		105,631
22	Purchased Power	106,110		106,110		106,110
23	Purchased Water	217,663		217,663		217,663
24	Chemicals	113,899	(31,921)	81,978		81,978
25	Materials, Supplier, and Other Maintenance Expenses	116,943		116,943		116,943
26	Engineering Fees	9,953	(1,795)	8,158		8,158
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	3,815		3,815		3,815
29	Contractual Services - Other	272,323		272,323		272,323
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	22,580		22,580		22,580
32	Insurance - Other	50,734		50,734		50,734
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	45,196		45,196		45,196
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	36,709		36,709		36,709
36	Regulatory Commission Expenses - Other	-		-		-
37	Testing, Meter Reading, and Miscellaneous Expenses	43,343	6,495	49,838		49,838
38	Total Operating Revenue Deductions	$ 1,547,459		$ 1,506,383		$ 1,506,383
39						
40	Operating Income Before Income Taxes	478,600		578,581		1,188,908
41						
42	Operating Expenses					
43	Depreciation	375,543		375,543		375,543
44	Amortization of CIAC	(30,502)		(30,502)		(30,502)
45	Amortization of PAA	(36,069)		(36,069)		(36,069)
46	Taxes Other than Income	79,357	(6,799)	72,558		72,558
47		388,329		381,530		381,530
48	Income Taxes					
49	Federal Income Tax	119,283	(12,122)	107,161		107,161
50	State Income Tax	63,043	(6,407)	56,636		56,636
51		182,326		163,797		163,797
52						
53	Net Operating Income	$ (92,055)	$ (7,499)	$ 33,254	$ 610,327	$ 643,581
54						
55	Rate Base	$ 9,076,056	(11,532)	$ 9,064,524		$ 9,064,524
56						
57	Return On Rate Base	-1.01%		0.37%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.			Amount	
1	Rate Base	$	9,064,524	(1)
2	Required Rate of Return		7.10%	(2)
3				
4	Net Operating Income Required	$	643,581	
5	Net Operating Income at Present Rates		35,873	
6				
7	Required Change in Company Revenue	$	607,708	

Notes:

(1) Schedule SLS-3SR
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,084,964	$ 1,547,459	308,972	$ 79,357	$ 149,176
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,619)				
5	Salaries & Wages		(7,497)			
6	Employee Pension and Benefits		(6,359)			
7	Engineering Fees		(3,057)			
8	Testing, Meter Reading, and Miscellaneous		6,495			
9	Payroll Tax				(6,799)	
10	Chemicals		(31,921)			
11	Total OCA Adjustments	$ (2,619)	$ (42,338)	$ -	$ (6,799)	
12						
13	Total Adjusted Income Before Income Taxes	$ 2,082,345	$ 1,505,121	$ 308,972	$ 72,558	$ 195,695

Community Utilities of Pennsylvania Inc. - Water Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022	OCA Recommended Rate Base	OCA Adjustment for Rate Base
1	Original Cost of Utility Plant in Service	$ 13,579,565		$ 13,579,565
2	Less: Accumulated Depreciation	4,948,852		4,948,852
3	Subtotal	8,630,713	-	8,630,713
4				
5	Deduct			
6	Contributions in Aid of Construction	1,234,996		1,234,996
8	Net Plant Acquisition Adjustment	719,891		719,891
9	Net Utility Plant	6,675,826	-	6,675,826
10				
11	Less			
12	Customer Deposits	1,442		1,442
13	Accumulated Deferred Income Taxes	454,825		454,825
14				
15	Add			
16	Proforma Level of Plant	2,580,058		2,580,058
17	Deferred Charges	75,983		75,983
18	Cash Working Capital	200,456	(11,532)	188,924 (1)
19				
20	Total Rate Base	$ 9,076,056	$ (11,532)	$ 9,064,524

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12SR

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Flat/Base Rate Revenue					
3	Residential	$ 2,288,594		$ 2,288,594		$ 2,288,594
4	School	16,922		16,922		16,922
5	Availability	37,170		37,170		37,170
6	Commercial	13,857		13,857		13,857
7	Volumetric Revenue					
8	Residential	304,822		304,822		304,822
9	Commercial	3,027		3,027		3,027
10	Other Operating Revenues					
11	Forfeited Discounts	(1,789)	$ 5,502	3,713		3,713
12	Miscellaneous Service Revenues	1,180	$ (507)	673		673
13	Purchased Services	-		-		-
14	Accruals	(71,652)	$ 71,652	-		-
15	Gross Operating Revenues	2,592,131		2,668,778	682,198	3,350,976
16	Allowance for Uncollectible Accounts	(26,658) (1)		(26,658)	(2,688)	(29,346)
17	Net Operating Revenues	$ 2,565,473	$ -	$ 2,642,120	$ 684,886	$ 3,327,006
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	$ 469,108	(8,875)	$ 460,233		$ 460,233
21	Employee Pensions & Benefits	132,598	(7,528)	125,070		125,070
22	Sledge Hauling & Sewer Rodding	226,788		226,788		226,788
23	Purchased Power	125,637		125,637		125,637
24	Chemicals	129,205	(51,205)	78,000		78,000
25	Materials, Supplier, and Other Maintenance Expenses	134,556		104,147		104,147
26	Engineering Fees	11,784	(2,126)	9,658		9,658
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	4,517		4,517		4,517
29	Contractual Services - Other	322,435		322,435		322,435
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	26,736		26,736		26,736
32	Insurance - Other	60,070		60,070		60,070
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	53,513		53,513		53,513
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	43,464		43,464		43,464
36	Regulatory Commission Expenses - Other	-		0		0
37	Testing, Meter Reading, and Miscellaneous Expenses	65,303	(18,551)	46,752		46,752
38	Total Operating Revenue Deductions	1,805,714		1,687,020		$ 1,687,020
39						
40	Operating Income Before Income Taxes	759,759		955,100		1,639,986
41	.					
42	Operating Expenses					
43	Depreciation	665,056	(23,640)	641,416		641,416
44	Amortization of PAA	(58,573)		(58,573)		(58,573)
45	Taxes Other Than Income Taxes	101,940 (2)	(1,315)	100,625		100,625
46	Amortization of CIAC	(86,762)		(86,762)		(86,762)
47		621,661		596,706		596,706
48	Income Taxes					
49	Federal Income Tax	174,497	(43,783)	130,714		130,714
50	State Income Tax	92,224	(23,140)	69,084		69,084
51		266,721		199,798		199,798
52						
53	Net Operating Income	$ (128,623)	$ (88,285)	$ 158,596	$ 684,886	$ 843,482
54						
55	Rate Base	$ 12,862,170	(982,139)	$ 11,880,031		$ 11,880,031
56						
57	Return On Rate Base	-1.00%		1.33%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates
(2) Supporting Schedule No. 5

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	
1	Rate Base	$ 11,880,031	(1)
2	Required Rate of Return	7.10%	(2)
3			
4	Net Operating Income Required	$ 843,482	
5	Net Operating Income at Present Rates	161,284	
6			
7	Required Change in Company Revenue	$ 682,198	

Notes:

(1) Schedule SLS-6SR
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,642,120	$ 1,805,714	519,721	$ 101,940	$ 214,745
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,688)				
5	Salaries & Wages		(8,875)			
6	Employee Pension and Benefits		(7,528)			
7	Engineering Fees		(3,620)			
8	Materials, Supplier, and Other Maintenance Expenses		0			
9	Testing, Meter Reading, and Miscellaneous		(18,551)			
10	Payroll Tax				(1,315)	
11	Chemicals		(51,205)			
12	Total OCA Adjustments	$ (2,688)	$ (89,779)	$ -	$ (1,315)	$ -
13						
14	Total Adjusted Income Before Income Taxes	$ 2,639,432	$ 1,715,935	$ 519,721	$ 100,625	$ 303,150

Community Utilities of Pennsylvania Inc. - Wastewater Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022	OCA Adjustment for Rate Base	OCA Recommended Rate Base	
1	Original Cost of Utility Plant in Service	$ 21,361,044	$ (987,784)	$ 20,373,260	
2	Less: Accumulated Depreciation	10,455,892	34,458	(10,421,434)	
3	Subtotal	10,905,152		9,951,826	
4					
5	Deduct				
6	Contributions in Aid of Construction	1,775,060		1,775,060	
8	Net Plant Acquisition Adjustment	1,057,608		1,057,608	
9	Net Utility Plant	8,072,484	-	7,119,158	
10					
11	Less				
12	Customer Deposits	1,825		1,825	
13	Accumulated Deferred Income Taxes	774,535		774,535	
14					
15	Add				
16	Proforma Level of Plant	5,272,944		5,272,944	
17	Deferred Charges	66,921		66,921	
18	Cash Working Capital	226,181	(28,813)	197,368	(1)
19					
20	Total Rate Base	$ 12,862,170	$ (982,139)	$ 11,880,031	

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12SR

Community Utilities of Pennsylvania Inc.

Adjustment to Salarires & Wages - Employees and Employee Pensions and Benefits
For the Rate Year Ending December 31, 2022

Line No.					Water Allocation (45.79%)	Wastewater Allocation (54.21%)
1	**Salaries & Wages - Employees**					
2	FTY Salary	$	909,431	(1)		
3	Less: Vacant Positions		65,755	(2)		
4	Salary Subject to Annual Increase		843,676			
5	3% Increase Annual Increase		25,310			
6	Salary with Increase		868,986			
7	Add: Vacant Positions		65,755			
8	FPFTY Salaries Per OCA		934,741			
9	FPFTY Salaries Per Company		951,113	(1)		
10	Variance	$	(16,372)		$ (7,497)	$ (8,875)
11						
12	**Payroll Tax**					
13	FPFTY Salary Increase	$	25,310			
14	FICA Adjustment (7.65%)		1,936			
15	Payroll Tax Adjustment FTY to FPFTY	$	1,936			
16	FTY Payroll Tax		68,265			
17	FPFTY Payroll Tax Per OCA	$	70,201			
18	FPFTY Payroll Tax Per Company	$	68,820	(3)		
19	Variance	$	1,381		$ 632	$ 749
20						
21	**Employee Pension and Benefits**					
22	FPFTY Salary Increase	$	25,310			
23	Non-Elective 401k Contribution (3%)	$	759			
24	Company 401k Match (4%)		1,012			
25	Pension and Benefits Adjustment FTY to FPFTY	$	1,772			
26	FTY Pension and Benefits		228,930	(1)		
27	FPFTY Pension and Benefits Per OCA	$	230,702			
28	FPFTY Pension and Benefits Per Company		244,588	(1)		
29	Variance	$	(13,886)		$ (6,359)	$ (7,528)

Notes:

(1) Direct Testimony of Perry Brown Schedule WP-PB-02 Salaries and Wages Forecast for Water and Wastewater
(2) Company Response to I&E-RE-4-D Salary & Benefits 2021 & 2022
(3) Does not match the Company's Response to I&E-RE-4-D Salary & Benefits 2021 & 2022 calculation of payroll tax, which results in an increase

Community Utilities of Pennsylvania Inc.

Adjustment for Chemical Expense
For the Rate Year Ending December 31, 2022

Line No.		5480 Chlorine		5490 Other Treatment Chemicals		5485 Odor Control Chemicals		Total Annual Chemical Expense
1	2018	$ 7,256	(1)	$ 153,460	(1)	$ 2,692	(1)	$ 163,408
2	2019	12,311	(1)	105,772	(1)	7,690	(1)	125,773
3	2020	18,488	(2)	145,495	(2)	4,200	(2)	168,183
4	3-year Average	$ 12,685		$ 134,909		$ 4,861		$ 152,455
5								
6								
7				Water			Wastewater	
8		**Total 5480 Chlorine Expense**		**ERC Allocation Weight**		**Total 5480 Chlorine Expense for Water**	**ERC Allocation Weight**	**Total 5480 Chlorine Expense for Wastewater**
9	Amount Per Company	$ 12,685		100.00%		$ 12,685	0.00%	$ -
10	Amount Per OCA	16,448		100.00%		16,448	0.00%	0
11	OCA Adjustment					3,763		0
8		**Total 5485 Odor Control Expense**		**ERC Allocation Weight**		**Total 5485 Odor Control Expense for Water**	**ERC Allocation Weight**	**Total 5485 Odor Control Expense for Wastewater**
9	Amount Per Company	$ 13,820		0.00%		$ -	100.00%	$ 13,820
10	Amount Per OCA	4,861		0.00%		0	100.00%	4,861
11	OCA Adjustment					0		(8,959)
8		**Total Chemicals 5490 Other Treatment Chemicals**		**ERC Allocation Weight**		**Total 5490 Other Treatment Chemicals Expense for Water**	**ERC Allocation Weight**	**Total 5490 Other Treatment Chemicals Expense for Wastewater**
9	Amount Per Company	$ 212,839		45.79%		$ 97,459	54.21%	$ 115,380
10	Amount Per OCA	134,909		45.79%		61,775	54.21%	73,134
11	OCA Adjustment					(35,684)		(42,246)
	Total OCA Adjustment					$ (31,921)		$ (51,205)

Notes:

(1) Per the Company's response to OCA Set II-8 Chemical Expense 2021 & 2022 workbook
(2) Per the Company's repsonse to OCA SetI II-8 Chemical Expense HTY

Community Utilities of Pennsylvania Inc.

Adjustments to Taxes Other Than Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	Rate	Amount Per OCA
1	**Water**			
2	Utility Commission Tax	$ 2,695,291	0.66%	$ 17,789
3	Real Estate Tax	16,159,623	0.14%	22,623
4	Payroll Taxes			32,145 (1)
5	Total			$ 72,558
6				
7				
8	**Wastewater**			
9	Utility Commission Tax	$ 3,327,006	0.66%	$ 21,958
10	Real Estate Tax	27,073,908	0.15%	40,611
11	Payroll Taxes			38,056 (1)
12	Total			$ 100,625

Notes

(1) Calculated on Schedule SLS-7SR line 18 multiplied by water and wastewater allocation ratios

Docket Nos. R-2021-305207
R-2021-305206
Schedule SLS-12SR
September 3, 2021

Community Utilities of Pennsylvania Inc.

Adjustments to Cash Working Capital
For the Rate Year Ending December 31, 2022

Line No.			Amount Per OCA
1	**Water**		
2	Maintenance and General Expenses	$	1,506,383
3	Taxes Other Than Income		72,558
4	Total	$	1,578,941
5			
6	Total Cash Working Capital	$	197,368
7			
8	**Wastewater**		
9	Maintenance and General Expenses	$	1,687,020
10	Taxes Other Than Income		100,625
11	Total	$	1,787,645
12			
13	Total Cash Working Capital	$	223,456

Community Utilities of Pennsylvania Inc.

Adjustment to Allowance for Uncollectible Accounts
For the Rate Year Ending December 31, 2022

Line No.		Water				
		Amount Per Present Rates		Amount Per OCA		OCA Adjustment
1						
2						
3	Revenue	$ 2,043,428	(1)	$ 2,710,041	(2)	
4	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)	
5	Allowance for Uncollectible Accounts	$ (17,165)		$ (19,783)		$ (2,619)
6						
7		**Wastewater**				
8		Amount Per Present Rates		Amount Per OCA		OCA Adjustment
9						
10	Revenue	$ 2,592,131	(1)	$ 3,350,976	(4)	
11	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)	
12	Allowance for Uncollectible Accounts	$ (21,774)		$ (24,462)		$ (2,688)

Notes:

(1) Direct Testimony of Perry Brown, Exhibit CUPAW EX PAB-1 p 2-3
(2) Schedule SLS-1SR
(3) Direct Testimony of Perry Brown, page 11, line 8
(4) Schedule SLS-4SR

Community Utilities of Pennsylvania Inc.

Adjustment to Federal and State Taxes
For the Rate Year Ending December 31, 2022

Line No.		Water	Wastewater
1	Total Revenue	$ 2,695,291	$ 3,327,006
2	Less:		
3	Operating Expenses	1,506,383	1,687,020
4	Depreciation and Amortization	308,972	496,081
5	Taxes Other Than Income	72,558	100,625
6	Interest Expense	240,451	351,748
7	Taxable Income	$ 566,927	$ 691,532
8			
9	**State Taxes**		
10	Taxable Income	566,927	691,532
11	State Tax Rate	9.99%	9.99%
12	FPFTY State Taxes	$ 56,636	$ 69,084
13			
14	**Federal Taxes**		
15	Taxable Income	$ 566,927	$ 691,532
16	Less: State Taxes	56,636	69,084
17	Federal Taxable Income	$ 510,291	$ 622,448
18	Federal Tax Rate	21%	21%
19	FPFTY Federal Taxes	$ 107,161	$ 130,714

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Stacy L. Sherwood, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 1SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021 Signature: _____
*316721 Stacy L. Sherwood

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 2SR

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission v. Community Utilities of Pennsylvania, Inc.	Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

SURREBUTTAL TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

September 3, 2021

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Introduction

Q. Please state your name, business address and occupation.

A. My name is Noah D. Eastman. My business address is 555 Walnut Street, Forum Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate (OCA).

Q. Are you the same Noah D. Eastman who filed Direct Testimony in this proceeding identified as OCA Statement 2?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. My surrebuttal testimony is in response to the rebuttal testimony of Community Utilities of Pennsylvania (CUPA) witness Dylan D'Ascendis. To the extent that the Company's witness has provided rebuttal to a position that I took in my direct testimony but did not address in this surrebuttal testimony, it should not be construed that I agree with the Company.

Q. How is your Surrebuttal Testimony organized?

A. As this testimony is a response to Mr. D'Ascendis, I have organized my surrebuttal similarly to his. My Surrebuttal Testimony addresses the following areas:

- Discounted Cash Flow (DCF) Issues
- Capital Asset Pricing Model (CAPM) Issues
- My rejection of Mr. D'Ascendis' "Size Adjustment"

<u>Discounted Cash Flow Issues</u>

Q. What issues did Mr. D'Ascendis identify as problematic with your Direct Testimony regarding application of your DCF Model?

A. Mr. D'Ascendis' main issue is my reliance on the DCF as the basis for my equity return estimate, with the basis of his argument formed on the market to book ratio of the water proxy groups.

Q. Has your opinion changed as to your reliance on the DCF model with other models as a check to the reasonableness of the DCF indicated return on equity?

A. No, it has not.

Mr. D'Ascendis quotes the assertions of Roger A. Morin, and others, that it is best to use multiple methods in estimating the return on equity in calculating the rate of return because it makes use of more information.[1] This assertion is not necessarily incorrect, and to say that I did not consider the CAPM in my analysis would be a mischaracterization. The CAPM is used as a check on reasonableness of the DCF, and in combination with the historical returns earned by Pennsylvania water utilities, I deemed my findings to support the reliance on my lower 9.34% return on equity using analyst estimates. Additionally, it goes against Pennsylvania Public Utility Commission (PUC) precedent to give equal weight to the CAPM and any other models.

[1] CUPA Statement No. 5-R, pp. 7-9

The DCF model has been the basis of return on equity calculations by the PUC, and as noted in my direct testimony, has been confirmed by the commission in multiple cases.[2] To keep with current PUC precedent, the DCF model should still be the basis for return on equity estimation, with other models used as a check on the reasonableness.

Q. On page 7 of his Rebuttal Testimony, Mr. D'Ascendis states that all models should be given weight in calculation of the return on equity because the DCF tends to "mis-specify the investor-required return when market to-book ("M/B") ratios are not at unity (i.e., 1.0)." Do you agree with this position?

A. No. The most glaring issue with his logic is that it ignores the Efficient Market Hypothesis.[3] Investors are aware of the dynamics of regulated utilities, and how rates are and have been set for decades. Investors have the knowledge that nearly all utilities have their rates set based on the book value of their assets (i.e., rate base and capital structure), and this knowledge is reflected in the prices that investors are willing to pay for stocks. The analysts who attempt to forecast growth also have the knowledge of how rates are set in the regulated utility industry, and absolutely take the market to book ratio into account when they forecast. As such, these dynamics are represented in the DCF cost rates.

Also, the DCF method is merely a method to calculate the return on equity that the utility should have the opportunity to earn. Using market premiums with equal weighting of historic and forecasted premiums, as Mr. D'Ascendis did, the CAPM is just another

[2] OCA Statement 2, p. 7

[3] Fama, Euguene F. "Efficient Capital Markets: A review of Theory and Empirical Work", *The Journal of Finance,* Vol. 25, No. 2. (May 1970), pp. 383-417.

method of estimating the return on equity with the outcome being slightly higher due to different inputs. The main issue Mr. D'Ascendis seems to have with the use of the DCF is that its estimate is too low, and thus would make the returns too low in reference to the market value of the equity.[4] But, as stated above, investors are aware of the difference in market and book capitalization, and the effect that it has rate setting.

<u>Capital Asset Pricing Model ("CAPM") Issues</u>

Q. What issues did Mr. D'Ascendis have with your calculation of the CAPM in your Direct Testimony?

A. Mr. D'Ascendis disagreed with my use of current interest rates in my CAPM analysis and my use of the geometric mean returns and "expected returns from investment houses" in my calculation of the market risk premium.

Q. What issue did Mr. D'Ascendis take with your use of current interest rates?

A. Mr. D'Ascendis believes that my use of a 6-month average of daily rates on 30-year Treasury Bonds is inaccurate because it (1) is not forward looking and as such does not consider investors' expectations and (2) does not provide any more accuracy.

Q. Do you agree with Mr. D'Ascendis criticisms?

A. I do not. Mr. D'Ascendis is correct that my use of an average of daily rates is not forward looking, and they are that way for reasons discussed in my Direct Testimony and others I will lay out here.

[4] CUPA Statement No. 5-R, p. 13 & Schedule DWD-2R

As stated in my Direct Testimony, rate forecasts have been very wrong for more than a decade. Evidence confirming this is addressed in my OCA Statement 2 (pp. 14-15). While I do agree that investors likely use Blue Chip Financial Forecasts in their investment decisions, I also believe, as the Efficient Market Hypothesis would indicate, that those forecasts are considered in the current rates of 30-year treasury bonds. Those considerations provide upward or downward movement in current rates, and as they are adjusted over time investors will continue to reassess. However, giving full weight to projected rates is nearly guaranteed to miscalculate the risk-free rate. This results in setting a rate of return based on speculative rates that (1) do not exist today, (2) may never occur, and (3) are almost always wrong and that difference is nearly always <u>in one direction (upward).</u>

Q. Do you agree with Mr. D'Ascendis' critique of your use of the geometric mean in calculating the historical growth rate of the S&P 500?

A. No. On page 10 and 11 of OCA Statement 2, I laid out the differences in the arithmetic and geometric mean. Mr. D'Ascendis argues that because the geometric mean only considers the beginning value, ending value, and number of periods, that the geometric mean does not adequately reflect risk and volatility. This misrepresents the value of the geometric mean, as the geometric mean provides the real return on investments over time since it accounts for the ability to compound returns. The issue with the arithmetic mean, as discussed in OCA Statement 2, is that it calculates the average while treating each year independently. So, the arithmetic mean may be more accurate for estimating the expected return for any one-year period. However, investors are not exclusively investing on one-

year time horizons, and because of this the geometric mean should be used when calculating the historical return on the S&P 500 for purposes of the CAPM analysis.

Q. In your Direct Testimony, you used the 10-year forecasted risk premiums from multiple sources from investment and investment advisory firms such as Vanguard, Schwab, and Duff and Phelps. Do you believe these risk premiums misrepresent the Market Risk Premium, as Mr. D'Ascendis alleges?

A. No. Mr. D'Ascendis argues that the forecasted risk premium by the firms that I used in my estimation are not indicative of the actual market risk premium because they are the "expected returns from pension funds or investment houses". I believe that these forecasts represent the risk premiums that investors can expect in the coming decade. These publications are meant to inform investors on what they should expect their risk premium to be over the next decade, representative of the entire market.

While Mr. D'Ascendis' explanation of the difference between expected and required returns is correct, his argument means to change the function of the risk premium in its place in the CAPM. The risk premium, by definition, is the expected return on the entire market minus the risk-free rate of return.[5] After using the expected return, risk free rate, and beta as inputs in the CAPM, the CAPM calculates the required rate of return to invest in a specific stock. In this case, the stock is a regulated water company similar to the Proxy Group of companies. Simply put, the CAPM uses the expected returns on the market, among other inputs, to find the required return to invest in a stock.

[5] Mullins, D. W. (August 1, 2014). Does the capital asset pricing model work? Harvard Business Review. https://hbr.org/1982/01/does-the-capital-asset-pricing-model-work.

Also, I would like to point out that the 6.50% that I used as the measure of the risk premium in my CAPM analysis is higher than the Value Line projections and resulting risk premium used by Mr. D'Ascendis (5.98%)[6] and I&E Witness Keller (6.36%).[7] What does not exist in my CAPM analysis that leads to my lower ROE estimate is the excessively high risk premiums of the Value Line S&P 500 forecast (12.30%) and the Bloomberg S&P 500 forecast (14.71%).[8]

<u>Size Adjustment</u>

Q. In his Rebuttal Testimony, Mr. D'Ascendis continues to promote a 100 basis point size adjustment to compensate CUPA investors for the increased risk of investment in a comparatively small company. Does his argument change your belief that a size adjustment is unnecessary and would lead to a higher ROE than should be authorized?

A. It does not. The findings of Dr. Aswath Damodaran still hold true. The size premium exists historically over the very long term, but today it is small and there is little evidence that size is the actual cause of the premium. The findings of Dr. Vitali Kalesnik and Noah Beck in their study of the size premium came to a similar conclusion as Dr. Damodaran. Dr. Kalesnik and Mr. Beck concluded after their quantitative analysis of the size premium:

> Today, more than 30 years after the initial publication of Banz's paper, the empirical evidence is extremely weak even before adjusting for possible biases. The return premium is not statistically significant in any of the international markets, whether taken alone or in combination. <u>The U.S. long-term size</u>

[6] CUPA Statement No. 5-R, Schedule DWD 1-R, p. 23
[7] I&E Exhibit No. 2, Schedule 14, p. 1
[8] CUPA Statement No. 5-R, Schedule DWD 1-R, p. 23

> premium is driven by the extreme outliers, which occurred three-quarters of a century ago. These extreme outliers confound the standard techniques of setting confidence bounds around the estimated premium. Finally, adjusting for biases, most notably the delisting bias, makes the size premium vanish. If the size premium were discovered today, rather than in the 1980s, it would be challenging to even publish a paper documenting that small stocks outperform large ones. All this evidence makes us question the existence of the size premium as such.[9]

Q. Do you have any other comments in response to Mr. D'Ascendis' proposed adjustment to reflect the size of Community Utilities of Pennsylvania?

A. Yes. It is important to remember that CUPA, being a subsidiary of Corix, is not a publicly-traded company and does not access equity in the same manner as the utilities in the proxy group. As such, its size should not be considered in establishing a return on equity estimate.

Further, most of the water utilities in the proxy groups utilized by Mr. D'Ascendis and myself have multiple subsidiaries operating in different jurisdictions. Applying the logic behind Mr. D'Ascendis size adjustment, each of those subsidiaries should be considered smaller and thus, riskier, than the utilities in the proxy group. This logic is flawed, however, as those subsidiaries (including CUPA) do not raise their equity capital directly from investors but as a consolidated entity.

Conclusion

Q. Would you like to make any changes to your rate of return recommendation previously stated in OCA Statement 2?

[9] Kalesnik, V. & Beck, N. (2014, November). Busting the Myth About Size. Simply Stated. https://www.researchaffiliates.com/content/dam/ra/documents/284-busting-the-myth-about-size.pdf.

A. No. I maintain my original recommendation, which is shown below in Table 1.

	Percent	Cost Rate	Cost of Money
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Table 1

Q. Does this conclude your Surrebuttal Testimony?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Noah D. Eastman, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 2SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021
*316715

Signature: _____
Noah D. Eastman

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

OCA STATEMENT 3SR

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket Nos. R-2021-3025206
	)	R-2021-3125207
Community Utilities of Pennsylvania, Inc.	)	

SURREBUTTAL TESTIMONY
OF
JEROME D. MIERZWA

ON BEHALF OF
THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

SEPTEMBER 3, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN THIS PROCEEDING?

A. Yes. My direct testimony was submitted as OCA Statement 3 on August 13, 2021, and my rebuttal testimony was submitted as OCA Statement 3R on August 27, 2021. My direct and rebuttal testimony addressed the water and wastewater cost of service ("COS") studies and rate design proposals presented by Community Utilities of Pennsylvania, Inc. ("CUPA" or "Company") and the OCA's responsive recommendations.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to the water and wastewater service rate design rebuttal testimony presented by CUPA witness Andrew Dickson.

II. WATER RATE DESIGN

Witness: Andrew Dickson

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT THE WATER SERVICE RATES OF TAMIMENT CUSTOMERS BE MOVED TOWARD THOSE THAT WOULD BE APPLICABLE ON A CONSOLIDATED BASIS, AND THAT FULLY CONSOLIDATED RATES

NOT BE ADOPTED IN THIS PROCEEDING. WHAT WAS MR. DICKSON'S RESPONSE?

A. At CUPA's requested revenue increase, fully consolidating the rates of Tamiment customers would result in a rate increase of 81% for the average Tamiment customer, which is 2.2 times the system average increase of 36.8%. I recommended that, instead, Tamiment customer rates be moved toward those that would be applicable on a consolidated basis to provide for gradualism. Mr. Dickson refers to this as partial consolidation. Mr. Dickson disagrees with partial consolidation for several reasons. He contends that partial consolidation will leave CUPA's other customers subsidizing Tamiment customers. He also claims that Tamiment customers have not experienced a rate increase in over 10 years, and that the 81% increase proposed by CUPA equates to an average increase of only 6.1% per year.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON?

A. As indicated in my direct testimony, while there is no hard and fast rule with respect to applying the concept of gradualism, typically an increase of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. An increase of 81%, or 2.2 times the system average increase, is not consistent with the concept of gradualism which is a principle of a sound rate design. Changes in rates should occur over time so that ratepayers can adapt to changing prices. Ratepayers should have an opportunity to adapt to changing prices regardless of when the last change in rates occurred. While partial consolidation of rates may result in some subsidization of Tamiment customers by other customers, that subsidization is significantly reduced under partial consolidation.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT CUPA'S EXISTING FIXED MONTHLY CUSTOMER CHARGES BE MAINTAINED. WHAT IS MR. DICKSON'S RESPONSE TO YOUR RECOMMENDATION?

A. In my direct testimony, I recommended that all of CUPA's fixed monthly customer charges be maintained because the cost of service study presented on page 16 of CUPA Exhibit SAM-1 (Revised) presented by Mr. Scott A. Miller indicated that the existing charges already exceeded cost-based charges. In responding to my recommendation, Mr. Dickson initially focuses on Tamiment customers and claims that since I have not performed a cost of service study for Tamiment customers, I cannot make such an assertion. Mr. Dickson is correct that I have not performed a cost of service study for Tamiment customers. Mr. Miller has presented a combined cost of service study for all territories served by CUPA, including the Tamiment service territory. A cost of service study solely for Tamiment customers would be of no value in this proceeding since CUPA eventually intends to consolidate the water rates of all of its service territories. I further discuss my recommendation to maintain CUPA's existing fixed monthly customer charges later in my testimony in responding to Mr. Dickson's claims concerning consolidated service territory customer charges.

Q. MR. DICKSON CLAIMS THAT YOUR RATE DESIGN RECOMMENDATIONS WOULD RESULT IN CUPA NOT RECOVERING ITS TOTAL REVENUE REQUIREMENT. DO YOUR RATE DESIGN RECOMMENDATIONS PROVIDE CUPA WITH THE RECOVERY OF ITS TOTAL REVENUE REQUIREMENT?

A. Yes. To support his claim, Mr. Dickson points to my recommendation that "Tamiment volumetric charges should be moved 70% toward the volumetric charge that would have been applicable on a consolidated basis." He then assumes that CUPA would be denied recovery of the 30% revenue difference between the Tamiment and the consolidated volumetric charge. Mr. Dickson misinterprets my recommendation. The 30% revenue difference would then be reflected in the consolidated volumetric charge, providing for recovery of CUPA's total revenue requirement.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT THE AVAILABILITY CHARGES FOR TAMIMENT SHOULD BE MOVED 55% TOWARD THE PROPOSED CHARGE. WHAT IS MR. DICKSON'S RESPONSE?

A. Mr. Dickson indicates that it is not clear how I concluded that 55% was appropriate, but assumes I am using a benchmark of 1.5 times the overall system increase. This assumption is correct. He then claims my 55% recommendation is flawed because it fails to consider the length of time since the last rate increase in the Tamiment availability charge, lacks a robust timeline for remedy, creates subsidization, and may deny CUPA recovery of its total revenue requirement.

Q. WHAT IS YOUR RESPONSE?

A. As indicated previously, the length of time since the last increase in Tamiment's availability charge is irrelevant. Customers need an opportunity to adjust to changing prices. Customers cannot adapt to changing prices before the change actually occurs. Further movement toward consolidated availability charges can be evaluated in CUPA's next base rate case. My recommended Tamiment availability charge significantly reduces the current subsidy. My recommendation concerning Tamiment

availability charges will not deny CUPA recovery of its total revenue requirement, as the unrecovered revenues would be recovered by maintaining the current availability charge for the consolidated service territory which CUPA has proposed to decrease, and increasing volumetric charges, if necessary.

Q. MR. DICKSON NOTES THAT THE DIFFERENCE BETWEEN YOUR PROPOSED 1.5 TIMES THE SYSTEM AVERAGE INCREASE FOR TAMIMENT AVAILABILITY CUSTOMERS AND PROPOSED 1.7 TIMES THE SYSTEM AVERAGE INCREASE FOR TAMIMENT RESIDENTIAL WATER CUSTOMERS ERODES YOUR RECOMMENDATION FOR GRADUALISM. WHAT IS YOUR RESPONSE?

A. The 1.7 times the system average increase referenced by Mr. Dickson for Tamiment Residential water customers is my recommended increase in the volumetric charge. When combined with my recommendation to maintain fixed monthly customer charges, the increase for the average Tamiment Residential would be 1.5 times the system average increase. Therefore, contrary to Mr. Dickson's claim, I am proposing a 1.5 times the system average increase for both Tamiment availability customers and the average Tamiment Residential water customer.

Q. AS YOU PREVIOUSLY INDICATED, IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT ALL EXISTING FIXED MONTHLY CUSTOMER CHARGES BE MAINTAINED, AND MR. DICKSON INITIALLY ADDRESSED THAT RECOMMENDATION WITH RESPECT TO TAMIMENT CUSTOMERS. MR. DICKSON SUBSEQUENTLY ADDRESSED THIS RECOMMENDATION FOR THE CONSOLIDATED

SERVICE TERRITORY. DOES MR. DICKSON'S ADDITIONAL TESTIMONY JUSTIFY INCREASING FIXED MONTHLY CUSTOMER CHARGES?

A. No. Mr. Dickson claims that my recommendation concerning fixed monthly customer charges fails to consider the recovery of additional fire protection rate revenues. He identifies these additional revenues to be $132,505 (CUPA W Statement No. 4-R at 13). Page 12 of CUPA Exhibit SAM-1 (Revised) identifies CUPA's customer-related costs to be $649,668. Including the additional fire protection revenues as customer-related costs that should be recovered through customer charges would increase those costs to $782,173, or by 20 percent. The current consolidated service territory monthly customer charge for a 5/8-inch meter is $17.25 and the Tamiment charge, on a monthly basis, is $18.18. Increasing each of the cost-based customer charges reflected on page 16 of CUPA Exhibit SAM-1 (Revised) by 20 percent would result in charges for all meter sizes except a 5/8-inch meter in the consolidated service territory that are less than the current charges. Therefore, there is no cost basis to increase to increase these customer charges. The cost-based charge for a 5/8-inch meter in the consolidated service territory as reflected on page 16 of CUPA Exhibit SAM-1 (Revised) is $14.80. Increasing this rate by 20 percent results in a customer charge of $17.76 which exceeds the current charge of $17.25. However, the $17.76 charge is based on CUPA's requested revenue requirement in this proceeding. CUPA is unlikely to receive 100 percent of its requested revenue requirement. If CUPA receives 97 percent of its requested revenue requirement and rates are proportionately scaled-back as I have recommended, the $17.76 charge would be reduced to $17.25 and there would be no cost basis to increase any of CUPA's current fixed monthly customer charges.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMEND THAT IF CUPA IS AUTHORIZED A WATER RATE INCREASE WHICH IS LESS THAN ITS REQUESTED INCREASE, CUPA'S PROPOSED VOLUMETRIC AND AVAILABILITY CHARGES SHOULD BE PROPORTIONATELY SCALED BACK BEFORE APPLYING YOUR RATE DESIGN RECOMMENDATIONS. WHAT IS MR. DICKSON'S RESPONSE?

A. Mr. Dickson rejects my recommendation. He proposes that only volumetric charges be adjusted. He claims that such an approach is simpler to address changes in revenue requirements.

Q. WHAT IS YOUR RESPONSE?

A. If the Commission adopts my fixed monthly charge recommendation, any change in revenue requirements should also adjust availability charges. CUPA has requested a revenue requirement increase due to deficiencies in the recovery of costs through volumetric and availability charges. Therefore, volumetric and availability charges should both be adjusted. If the Commission does not accept my fixed monthly charge recommendation, then these charges should also be adjusted. It would not be a difficult task to adjust availability charges or fixed monthly charges. CUPA adjusted both types of charges to provide for the recovery of its revenue requirement in its filing in this proceeding.

III. WASTEWATER RATE DESIGN

Witness: Andrew Dickson

Q. MR. DICKSON CLAIMS THAT YOU HAVE A CONCERN WITH RESPECT TO THE MAGNITUDE OF THE PROPOSED RATE INCREASE FOR TAMIMENT WASTEWATER CUSTOMERS AND YOU RECOMMENDED THAT THE INCREASE SHOULD BE ADJUSTED TO PROVIDE FOR GRADUALISM. WHAT IS YOUR RESPONSE?

A. Mr. Dickson's claim is not accurate. The Company has proposed an increase of 19% for the average Tamiment Residential customer using 3,000 gallons of water per month. I have proposed an increase for the average Tamiment Residential customer equal to the system average increase of 37.9%.

Q. WHAT DID YOU RECOMMEND IN YOUR DIRECT TESTIMONY CONCERNING THE CONSOLIDATION OF WASTEWATER RATES?

A. CUPA is proposing to consolidate the rates of all three service territories and charge all customers, except schools and availability customers, a single monthly fixed (flat) charge. Currently, only the rates of the Utilities, Inc. of Pennsylvania and Penn Estates service territories (consolidated service territory) are consolidated. In my direct testimony, I recommended that in its next base rate proceeding CUPA convert customers in the consolidated service territory that are currently assessed flat rates to metered rates (made up of fixed and volumetric charges similar to the charges assessed to Tamiment customers). For purposes of this proceeding, I recommended there be no change to the existing structure of rates, so that the customers in the consolidated service territory continue to pay flat rates and the Tamiment customers continue to pay metered rates.

Q. DOES CUPA AGREE WITH YOUR PROPOSAL TO CONVERT CURRENT CONSOLIDATED SERVICE TERRITORY CUSTOMERS TO METERED RATES IN THE NEXT BASE RATE CASE?

A. No. Mr. Dickson claims that flat rates are common for wastewater customers. He claims that CUPA's goal of incorporating Tamiment into its current wastewater rate design is not to eliminate volumetric rates; he claims it is a byproduct. Mr. Dickson has indicated that CUPA is willing to consider volumetric rates in future cases, but the cost of service presented by CUPA does not assign costs to customer classes based on flow requirements, which would be a prerequisite to adopting metered rates based on class costs.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON'S CLAIMS THAT METERED RATES SHOULD NOT BE MAINTAINED FOR TAMIMENT IN THIS PROCEEDING?

A. Flat rates provide customers with an unlimited minimum usage allowance. That is, customers can use an unlimited amount of wastewater service without being assessed additional charges. Typically, minimum allowances are defined quantities (e.g., first 1,000 gallons per month). Thus flat rates are the most extreme form of minimum allowance because a customer's actual use of the utility system has no impact on rates. As explained in my direct testimony, it is Commission policy to eliminate minimum allowances and move utility rates toward metered rates. Assessing Tamiment customers a flat rate would be inconsistent with this Commission policy. In addition, it would be confusing to Tamiment customers if they were moved to a flat rate in this proceeding only to be moved back to metered rates in the next proceeding, as Mr. Dickson suggests CUPA may consider.

I have not proposed in this proceeding that consolidated service territory customers be assessed metered rates. Therefore, a cost-based rate for consolidated service territory customers need not to be determined in this proceeding. In its next base rate case, as part of the requirement that CUPA propose metered rates (made up of fixed and volumetric charges) for Utilities Inc. of Pennsylvania and Penn Estates customers, CUPA should provide a cost of service study that assigns costs to customer classes based on flow requirements.

Q. ON WHAT DO YOU BASE YOUR CLAIM THAT IT IS COMMISSION POLICY TO ELIMINATE MINIMUM ALLOWANCES AND TO MOVE UTILITY RATES TOWARD METERED RATES?

A. In A Guide to Utility Ratemaking, published by the Public Utility Commission and authored by two Commissioners, at page 151 it states: "The Commission's policy is to require the installation of meters and set usage rates to encourage conservation."[1] The internal citation is to 52 Pa. Code § 65.7. See also 52 Pa. Code § 65.20(6). The Commission's policy to encourage conservation by moving customers to metered, usage-based rates is also reflected in Commission Orders.[2]

Q. MR. DICKSON CLAIMS THAT TO HAVE TAMIMENT CUSTOMERS FULLY PAY THEIR COST OF SERVICE, AN INCREASE OF 104% WOULD BE REQUIRED TO CURRENT TAMIMENT RATES. WHAT IS YOUR RESPONSE?

[1] https://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf.

[2] See, for example: Pa. P.U.C. v. PPL Elec. Util. Corp., 237 PUR4th 419, 461 (PaPUC 2004); Pa. P.U.C. v. Total Envtl. Solutions, Inc. - Treasure Lake Water Div. and Treasure Lake Wastewater Div., 103 PaPUC 110, 160-161 (2008); Pa. P.U.C. v. Emporium Water Co., 95 PaPUC 191, 213, 208 PUR4th 502, 524 (2001); Pa. P.U.C. v. Lemont Water Co., 81 PaPUC 392, 420-421 (1994).

A. As previously explained, CUPA is proposing an increase of 19% for the average Tamiment Residential wastewater customer. Mr. Dickson fails to explain why an average increase of 19% is appropriate for the average Tamiment Residential customer when an average increase of 104% is required to recover the cost of service.

Q. MR. DICKSON CLAIMS THAT THE INCREMENTAL BENEFIT OF ADOPTING METERED RATES FOR ALL CUSTOMERS WOULD BE OUTWEIGHED BY THE ADMINISTRATIVE COSTS, AND IT MAKES MORE SENSE FOR CUPA TO INCORPORATE TAMIMENT RATES INTO THE CURRENT CONSOLIDATED RATE STRUCTURE THAN VICE VERSA. WHAT IS YOUR RESPONSE?

A. As indicated previously, adopting metered rates for the consolidated service territory would be consistent with the Commission's policy of eliminating minimum allowances and moving utility rates toward metered rates. Incorporating Tamiment rates into the current consolidated rate structure would be inconsistent with this policy and should not be pursued. In addition, adopting metered rates for all CUPA customers would provide additional incentives for customers to conserve and reduce their demands for both water and wastewater services. In the long run, the reduced demands for service will likely reduce CUPA's costs of providing water and wastewater services by reducing future capital expenditures and operating costs.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT CUPA ALSO ADOPT A LOW-INCOME VOLUMETRIC CHARGE FOR RESIDENTIAL WASTEWATER CUSTOMERS. DOES CUPA ACCEPT THAT A LOW-INCOME RATE SHOULD BE ESTABLISHED FOR TAMIMENT RESIDENTIAL CUSTOMERS?

A. Not at this time. Mr. Dickson claims that CUPA's cost of service study does not distinguish between types of customers and that Residential and Commercial customers are treated equivalently. He claims that the creation of a wastewater Low-Income rate only for Residential customers necessitates a separation of Residential and Commercial customers to prevent interclass subsidies. He further claims that I have not proposed a capping method to discourage abnormal demands from Low-Income customers. Finally, Mr. Dickson claims that the primary goal of CUPA's wastewater rate design is to provide consistency to customers in their rate design to facilitate understanding of their bills under new rates, and to fully incorporate the Tamiment service territory into CUPA's existing consolidated service territory rate design.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON'S CLAIMS CONCERNING THE ADOPTION OF A WASTEWATER LOW-INCOME VOLUMETRIC RATE FOR TAMIMENT RESIDENTIAL CUSTOMERS?

A. Under CUPA's rate design proposals for water service, the same volumetric rates were initially proposed for both Residential and Commercial customers, but then the Residential rate was increased to provide recovery of the discounts provided for under the water Low-Income program. There are no interclass subsidies created by the water Low-Income program.

Under the current Tamiment service territory wastewater rate structure, Residential and Commercial customers are currently assessed the same volumetric charge, and under my rate design proposal, Residential and Commercial customers would be initially assessed the same volumetric rates but the Residential volumetric rate would be adjusted to provide for the recovery of the discounts provided for under my proposed wastewater Low-Income program. Under my proposal, for CUPA's low-

income Residential wastewater customers in the other systems, who are not currently charged volumetric rates, their flat rates would be reduced and flat rates for the other Residential wastewater customers would be increased proportionately to recover the revenue associated with the discount. There would be no interclass subsidies crated by the wastewater Low-Income program. Therefore, Mr. Dickson's claim of interclass subsidies is without merit.

With respect to a capping method to discourage abnormal demands from Low-Income customers, there is no factual basis to impose a cap. At this time, we do not know how many customers will qualify for the Low-Income program or have any information about their usage with or without the discounted rate. Although CUPA has not proposed a cap for its water Low-Income program, a cap would be equally unsupported and premature. Data can be gathered during the pilot program and addressed by all parties in the next base rate case. For now, for those CUPA water and wastewater customers with volumetric rates, the volumetric rate itself will discourage "abnormal demands" because customers will still pay more for higher usage.

As previously explained, the Company's goal of incorporating Tamiment service territory rates into the existing consolidated service territory rate design is not an appropriate goal because it is inconsistent with Commission policy.

Q. DOES CUPA ACCEPT YOUR RECOMMENDATION TO LIMIT THE INCREASE IN THE TAMIMENT AVAILABILITY CHARGE TO PROVIDE FOR GRADUALISM?

A. No. Mr. Dickson claims, as he did in response to my recommendation for partial consolidation of Tamiment water rates, that applying gradualism in establishing the

Tamiment availability charge is not appropriate since it has been 10 years since the last rate increase.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON'S CLAIMS?

A. As explained in my response to Mr. Dickson's opposition to partial consolidation of Tamiment water rates, changes in rates should occur over time so that customers can adapt to changing prices. Gradualism should be provided for regardless of when the last change in rates occurred.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 3SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021
*316718

Signature: Jerome D. Mierzwa

Jerome D. Mierzwa

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 4SR

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket Nos. R-2021-3025206 (water)
	:	R-2021-3025207 (wastewater)
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	:	

SURREBUTTAL TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

SEPTEMBER 3, 2021

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, Pennsylvania, 17111.

Q. MR. FOUGHT, DID YOU ALSO SUBMIT DIRECT TESTIMONY IN THIS PROCEEDING ON BEHALF OF THE OFFICE OF CONSUMER ADVOCATE?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to portions of the rebuttal testimony by Emily Long, CUPA W Statement No. 7-R, regarding: (1) isolation valves; (2) boil water and do not consume advisories; (3) customer complaints regarding the Company's water systems; and (4) customer complaints regarding the Company's wastewater systems.

ISOLATION VALVES

Q. WHAT IS THE COMPANY'S POSITION ON EXERCISING ISOLATION VALVES IN ITS WATER SYSTEMS?

A. Ms. Long's Rebuttal Testimony did not address the exercising of isolation valves in the Tamiment or Penn Estates water systems. For Westgate, Ms. Long explained that during the 2020 inspection program, 100% of the Westgate system valves were inspected. Seventy-one valves were identified and two in prior system records were found to be non-existent during this inspection. In 2021 and in future years, 50% of valves will be inspected each year in rotation. Valves are grouped

into Zone 1 and Zone 2. Zone 1 valves will be exercised in odd number years. Zone 2 will be exercised in even number years. Valve inspections consist of exercising a water valve and filling out an inspection report to detail valve condition findings.[1]

Q. DO YOU HAVE ANY COMMENTS ON THE COMPANY'S VALVE EXERCISING PROGRAM?

A. As I stated in my Direct Testimony, the Company's records for each of its systems should include (1) the valve location, (2) date of attempt to exercise each valve; and (3) if the valve was broken or operable (successfully exercised). If the valve could not be properly exercised, the valve should be scheduled to be repaired or be replaced. The Company should furnish the OCA and other parties a report on the exercising records and schedule of any repair/replacements as part of the next rate case. The Company's plan to exercise 50% of valves in the Westgate water system is reasonable, assuming that its records show the information just discussed.

BOIL WATER AND DO NOT CONSUME ADVISORIES

Q. WHAT IS THE COMPANY'S POSITION ON BOIL WATER (BWA) AND DO NOT CONSUME ADVISORIES?

[1] CUPA Statement W&WW 7-R, pp. 18-19.

A. According to Ms. Long, each of the Company's BWAs has been issued in compliance with Department of Environmental Protection regulations in 25 Pa. Code Chapter 109 regarding public notification.[2]

Q. WHAT IS YOUR RESPONSE?

A. Given the concerns raised by customers in this proceeding, the Company should submit copies of all BWAs and Do Not Consume advisories to the OCA and parties every six months until the Company files its next base rate case.

TAMIMENT WATER SYSTEM

Q. WHAT IS THE COMPANY'S POSITION ON THE CUSTOMER COMPLAINTS RECEIVED BY THE COMPANY PRIOR TO THE PUBLIC INPUT HEARINGS (PIHs) REGARDING WATER QUALITY ISSUES IN THE TAMIMENT WATER SYSTEM?

A. Ms. Long stated that during 2019 and 2020 the Company received few water quality complaints, i.e. three dirty water complaints, eight low pressure and two chlorine odor complaints. She explained that (1) the dirty water and pressure complaints were related to switching wells for maintenance of different pressure zones; (2) five of the low pressure complaints were due to customer plumbing issues; (3) the remaining two low pressure calls were caused by an electrical issue related to a variable frequency pump that was resolved within 12 hours of

[2] CUPA Statement W&WW 7-R, pp. 26-27.

notification to the Company; and (4) the two chlorine odor complaints were investigated, but the operator could not detect any chlorine or other odors.[3]

Q. ARE MS. LONG'S RESPONSES TO THOSE CUSTOMER COMPLAINTS RECEIVED PRIOR TO THE PIH REASONABLE?

A. Yes.

Q. WHAT ISSUES DID MS. LONG IDENTIFY THAT CUSTOMERS TESTIFIED ABOUT AT THE PIH REGARDING WATER QUALITY ISSUES IN THE TAMIMENT WATER SYSTEM?

A. Ms. Long stated that customers testified about rings in toilets, discolored clothes, sediment in water, chlorine odor, water quality notices, and failing hot water heaters.[4]

Q. WHAT IS THE COMPANY'S POSITION ON THOSE COMPLAINTS?

A. Ms. Long did not specifically address customer testimony about rings in toilets, discolored clothes, sediment in water and failing hot water heaters in the Tamiment Water System.

Ms. Long did testify that: (1) only two Tamiment customers at the public input hearings indicated they had low pressure issues; (2) low pressure concerns within

[3] CUPA Statement W&WW 7-R, pp. 5-6.
[4] CUPA Statement W&WW 7-R, p. 5.

the Tamiment service territory were previously addressed; and (3) investigations do not indicate any ongoing or material low pressure concerns.[5]

Q. HOW MANY CUSTOMERS TESTIFIED AT THE PIH ABOUT RINGS IN TOILETS, DISCOLORED LAUNDRY, SEDIMENT IN WATER AND DAMAGED APPLIANCES AND FAILING HOT WATER HEATERS IN THE TAMIMENT WATER SYSTEM?

A. Customers testified in the PIH about the following issues in the Tamiment Water System:[6]

- Rings in toilets 4,
- Discolored laundry 2,
- Sediment in water 3, and
- Damaged appliances 2, and
- Failing hot water heaters 4.

Q. WHAT SHOULD THE COMPANY DO TO ADDRESS THESE ISSUES?

A. The Company should obtain and provide laboratory tests for hardness, total dissolved solids (TDS) and sulfate for each of its two wells. As I explained in my Direct Testimony, higher levels of hardness, TDS, and sulfate can cause many of the problems identified by the Tamiment customers.

Also, a customer on Old Took Drive testified that she took TDS readings that exceeded 600 at two locations on the Tamiment Water System.[7] It should be noted that the customer did not specify the units of the TDS readings or identify

[5] CUPA Statement W&WW 7-R, p. 8
[6] OCA Statement 4, p.21-22
[7] TR 235-236.

the testing equipment. The Company should provide TDS test data on the two wells in the Tamiment Water System to verify that the well water does not exceed 500 mg/l TDS.

Q. WHY IS IT IMPORTANT THAT THE COMPANY DETERMINE WHAT ARE THE TDS LEVELS FOR THE TAMIMENT WELLS?

A. If the TDS exceeds 500 mg/l, the Company may have to provide treatment.[8] According to the Company's response to informal discovery,[9] the Company does not have any TDS test data on the Tamiment wells.

Q. WHAT IS THE COMPANY'S POSITION ON HYDRANT TESTING AND FLUSHING IN THE TAMIMENT WATER SYSTEM?

A. The Company flushes hydrants in water systems at least once per year. The Company acquired Tamiment on 8/14/19 and did not flush hydrants in 2019. Tamiment hydrants were flushed 7/1/20 – 7/6/20. Community wide communication was sent 6/29/20 and 7/2/20 letting customers know hydrants would be flushed. Hydrants were flushed 6/14/21 – 6/18/21, community wide communication was sent 6/11/21. The Company has a 3-year hydrant operation and maintenance schedule with Rogers Hydrant Service starting in 2020.[10]

[8] Treatment may also be required if sulfates exceed the Secondary Maximum Contaminant Level of 250 mg/l.
[9] On August 31, 2021, the Company served verified responses to informal discovery issued by the OCA.
[10] CUPA Statement W&WW 7-R, pp. 7-8.

Q. DO YOU AGREE WITH THE COMPANY'S POSITION ON HYDRANT TESTING AND FLUSHING OF THE TAMIMENT WATER SYSTEM?

A. Yes.

PENN ESTATES WATER SYSTEM

Q. WHAT ISSUES DID MS. LONG IDENTIFY THAT CUSTOMERS TESTIFIED ABOUT AT THE PIH REGARDING WATER QUALITY ISSUES IN THE PENN ESTATES WATER SYSTEM?

A. Ms. Long identified that customers testified about the August 2020 system outage, Boil Water Advisories, sediment in water and appliance issues.[11]

Q. WHAT INFORMATION DID MS. LONG PROVIDE ABOUT THE AUGUST 2020 WATER SYSTEM OUTAGE EVENT, WHICH MULTIPLE CUSTOMERS TESTIFIED ABOUT AT THE PUBLIC INPUT HEARING?

A. Ms. Long stated that in early 2020 the Company's wells could not keep up with the demand for water because of leaks and an increase in water usage due to people staying home because of Covid-19. In May 2020, the Company started sending voice reaches (VR) asking customers to conserve water and look for leaks within and around their homes and started hauling in bulk water to supplement tank levels. A leak detecting company was contracted to look for leaks. Eventually, on August 3, 2020, the water stored in the highest elevation tanks became low and the Company issued a boil water advisory and notified DEP. The Company

[11] CUPA Statement W&WW 7-R, p. 3.

provided pallets of bottled water to the customers which were delivered to the community's Welcome Center for almost 3 weeks. During that same period, operations discovered and repaired 3 large leaks in the system in July through August 2020. The Company completed the required water testing and the BWA was rescinded on August 13, 2020. A letter explaining what happened was mailed to all customers on September 8, 2020 and included in the Community's monthly newsletter in October 2020. In total, during 2020, the Company estimated 11,749,540 gallons in main breaks/leaks were identified and fixed at Penn Estates. Of that total, 7,334,540 gallons (or 62%) in main breaks/leaks were identified and fixed July to August. Because of the water shortage, the Company replaced 3 well pumps in 2020 and an additional well pump in 2021.[12]

Q. WHAT IS THE COMPANY PROPOSING TO PREVENT A REOCCURANCE OF THE AUGUST 2020 WATER OUTAGE?

A. The Company's contractor, GHD evaluated the system in late 2020 and early 2021 and prepared a report to provide recommendations to improve system operations to minimize loss of service. As stated by Ms. Long, this report dated February 23, 2021, makes the following recommendations: install new well(s), increase well efficiency, develop a written Standard Operating Procedure (SOP) for loss events, install booster pump to increase pressure in system, and hire third party leak detection specialist. The Company expects to start the engineering for a new well in 2023. The Company has written a SOP for water loss events and has a third-

[12] CUPA Statement W&WW 7-R, pp. 14-16.

party leak detection specialist available. GHD has also assisted the Company in assessing the feasibility of an interconnect with another water system.[13]

Q. DID MS. LONG PROVIDE ANY OTHER INFORMATION ABOUT THE AUGUST 2020 WATER OUTAGE?

A. Yes. Ms. Long provided information about the following issues: (1) complaints of dirty water regarding the hauled water; (2) the quality of the hauled water; (3) the suitability of the tankers hauling the water (4) the BWA was issued due to loss of pressure and (5) why the Well 4 pump was not lowered.

Ms. Long explained that when water was first hauled in by truck and discharged into a tank, the water flowing into the tank from the truck stirred sediment on the bottom of the tank resulting in customers experiencing dirty water. When operations realized this was the cause of the dirty water, they shut the tank valve prior to water being off loaded to prevent any stirred-up sediment from leaving the tank and allowed it to settle prior to reopening the valve.[14] Ms. Long's subsequent responses to informal discovery indicated that the hauled water was potable from an approved DEP source and hauled by tankers in accordance with Public Water Supply Permit.[15] Ms. Long stated that the August 2020 BWA was issued because of lack of pressure due to the tanks emptying.[16] Regarding lowering the pump in Well 4, Ms. Long stated that the Company's well permits would need to be reviewed and amended through DEP to lower a well pump which would be a costly

[13] CUPA Statement W&WW 7-R, pp. 20-21.
[14] CUPA Statement W&WW 7-R, p. 22.
[15] Public Water Supply Permit No. 3486567 dated July 12, 2017.
[16] CUPA Statement W&WW 7-R, p. 22.

and lengthy process which is not cost effective when compared to possibly permitting a new well for supply.[17]

Q. DO YOU HAVE ANY COMMENTS ON THE GHD REPORT AND THE COMPANY'S RESPONSES TO THE OTHER ISSUES CONCERNING THE AUGUST 2020 WATER OUTAGE?

A. Yes. The information provided about the hauled water and BWA have answered the questions about quality of the hauled water. Based on my review, implementation of the recommendations of the GHD Report[18] would greatly reduce or eliminate water outages in the future. Also, as I stated in my direct, the Company should have its engineer make recommendations and submit implementation schedules to: (1) provide adequate supply; (2) comply with DEP's minimum pressure of 20 pounds per square inch, gauge at ground level at all points in the distribution system under all conditions of flow; (3) reduce normal operating pressures exceeding 125 psi in its mains. If it is impossible to reduce the main pressure, the Company should install a pressure reducing valve upstream of the customer's service line; (4) increase pressures in low pressure areas so that it is suitable for all household purposes; (5) either drill a new well(s) or interconnect with another water supply utility; and (6) consider available financing assistance. The engineer's recommendations and schedules should be submitted to the OCA and the parties within one year.

[17] CUPA Statement W&WW 7-R, p. 21.
[18] Provided in response to informal discovery and marked Confidential.

Q. AFTER REVIEWING MS. LONG'S REBUTTAL TESTIMONY IN RESPONSE TO COMPLAINTS ABOUT DISCOLORED WATER[19], HAVE YOU CHANGED YOUR POSITION ON TESTING EXISTING WELLS IN THE PENN ESTATES SYSTEM?

A. Yes. If the recommendations in the GHD Report are implemented, those improvements should help to address water discoloration by increasing water supply so that wells do not draw air and adding a new source of water that does not require treatment for manganese.

Q. DID THE COMPANY PROVIDE THE INFORMATION YOU REQUESTED ABOUT ILLNESS COMPLAINTS IN THE PENN ESTATES WATER SYSTEM?

A. According to Ms. Long, the Company met with the two customers and explained that, although the Company had provided public notices for that time period in response to DEP requirements, the bacteria samples for March and April complied with DEP regulations. There has been no further contact from the customers about the illness complaints.[20]

WESTGATE WATER SYSTEM

Q. WHAT IS THE COMPANY'S POSITION ON COMPLAINTS ABOUT MOLD IN THE WESTGATE SYSTEM?

A. With regard to the mold complaints that occurred during 2019, the Company determined that closed valves had created dead-ends that caused chlorine residuals to drop lower than the surrounding areas and sediment to accumulate,

[19] CUPA Statement W&WW 7-R, p. 21.
[20] CUPA Statement W&WW 7-R, pp. 22-23.

which diminished the effectiveness of flushing. After opening the valves and flushing the system, the Company monitored the chlorine to ensure the issue was resolved. She also stated that the Company's 2020 complaints were due in the first case to the customer's internal plumbing, which was confirmed by the customer's plumber, and in the second case to an airborne bacteria that was growing externally on the faucets and unrelated to the water service.[21]

Q. DO YOU CONSIDER MS. LONG'S EXPLANATIONS REASONABLE?

A. Yes. It should be noted that all the Westgate treated water is purchased from the City of Bethlehem and the City's flushing operations and reservoir turnovers can also cause some Westgate customer complaints.

TAMIMENT, PENN ESTATES AND UIP WASTEWATER SYSTEMS

Q WHAT IS THE COMPANY'S POSITION ON THE SEWER BACK FLOW AND GRINDER PUMP ISSUES RAISED AT THE PIH?

A. Ms. Long testified that the ownership, operation and maintenance of grinder pumps and the sewer backflow/check valves are the customer's responsibility. The grinder pump discharges to a low pressure force main and the purpose of a sewer backflow/check valve is to prevent sewage from flowing back into the home when the grinder pump is not working. She also testified that an investigation by the Company and its contractor, Environmental Services Corporation (ESC), determined that the grinder pump issues during 2019 and 2020 on the Tamiment

[21] CUPA Statement W&WW 7-R, pp. 23-24.

Wastewater System were not a result of air or other blockages causing high pressures in the Company's low pressure force main.[22]

Q. DO YOU AGREE THAT THE INVESTIGATION BY THE COMPANY AND ESC WAS ADEQUATE TO DETERMINE THAT AIR OR OTHER BLOCKAGES IN THE COMPANY'S LOW-PRESSURE FORCE MAIN DID NOT CAUSE GRINDER PUMP PROBLEMS IN THE TAMIMENT WASTEWATER SYSTEM?

A. I can only agree that the investigation procedure was reasonable to determine that air or other blockages in the Company's low pressure force main would not cause high pressures at the time of the investigation.

Q. HAS THE COMPANY PROVIDED CUSTOMERS WITH INFORMATION REGARDING OPERATION AND MAINTENANCE OF GRINDER PUMPS?

A. Yes. Ms. Long testified that the Company has furnished such information to customers at the July 19, 2020 community meeting.[23]

Q. DO YOU HAVE ANY COMMENTS REGARDING PROVIDING CUSTOMERS INFORMATION REGARDING OPERATION AND MAINTENANCE OF GRINDER PUMPS?

A. Yes. The Company should provide every new customer that has a grinder pump with the information on operation and maintenance of grinder pumps or how to

[22] CUPA Statement W&WW 7-R, pp. 11-13.
[23] CUPA Statement W&WW 7-R, pp. 13-14.

obtain such information. The Company should also continue to provide the information to existing customers at future community meetings and upon request.

CONCLUSION

Q. PLEASE SUMMARIZE THE ACTIONS THE COMPANY SHOULD TAKE TO ADDRESS THE OUTSTANDING ISSUES RAISED IN YOUR DIRECT AND SURREBUTTAL TESTIMONY.

A. The Company should do the following:

- In future rate cases the Company should submit an individual PUC Form 500 for each of its water systems as other utilities that have multiple systems have agreed to do. This will be used for comparison with future submittals to determine progress in reducing UFW, especially in the Tamiment system.[24]

- For each of its water systems, the Company's records regarding isolation valves should include (1) the valve location, (2) date of attempt to exercise each valve; and (3) if the valve was broken or operable (successfully exercised). If the valve could not be properly exercised, the valve should be scheduled to be repaired or be replaced. As part of its next rate case filing, the Company should furnish the OCA and other parties a report on the exercising records and schedule of any repair/replacements.

- The Company should submit copies of all BWAs and Do Not Consume advisories to the OCA and other parties every six months until the Company files its next base rate case.

- For the Tamiment Water System, the Company should have each of its two wells tested for total dissolved solids, sulfates and hardness and provide the laboratory results to the OCA and parties within six months. If the TDS exceeds 500 mg/l or the sulfate exceeds 250 mg/l, the Company should have its engineer address the need for treatment to comply with the Pennsylvania Safe Drinking Water Act (Title 25, Chapter 109). The engineer's findings should be submitted to the OCA and other parties within one year.

- For the Penn Estates Water System, the Company should have its engineer make recommendations and submit implementation schedules that are

[24] OCA Statement 4, p. 5-6

necessary to: (1) ensure adequate supply; (2) comply with DEP's minimum pressure of 20 pounds per square inch, gauge at ground level at all points in the distribution system under all conditions of flow; (3) reduce normal operating pressures exceeding 125 psi in its mains. If it is impossible to reduce the main pressure, the Company should install a pressure reducing valve upstream of the customer's service line; (4) increase pressures in low pressure areas so that it is suitable for all household purposes; (5) either drill a new well(s) or interconnect with another water supply utility; and (6) consider available financing assistance. The engineer's recommendations and schedules should be submitted to the OCA and the parties within one year.

- For all applicable wastewater systems, the Company should provide every new customer that has a grinder pump with the information on operation and maintenance of grinder pumps or how to obtain such information. The Company should also continue to provide the information to existing customers at future community meetings and upon request.

- For the Penn Estates wastewater system, the Company should provide the OCA and other parties with copies of all the progress reports submitted to DEP regarding the Company's compliance with the DEP/Company Consent Order and Agreement (CO&A) dated October 22, 2020.[25]

Q. DOES THIS COMPLETE YOUR WRITTEN SURREBUTTAL TESTIMONY?

A. Yes, at this time. I reserve the right to supplement this testimony either in writing or orally if additional relevant information is received.

[25] OCA Statement 4, p. 27-28; OCA Exhibit TLF-1 (Paragraph 3.f).

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 4SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021 Signature: _____
*316717 Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

COMMONWEALTH OF PENNSYLVANIA

September 3, 2021

The Honorable Dennis J. Buckley
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania, Inc. - Water and Wastewater Divisions Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

Dear Judge Buckley:

Enclosed please find the Surrebuttal Testimony and Exhibit of Brian Kalcic, labeled OSBA Statement No. 1S, on behalf of the Office of Small Business Advocate ("OSBA"), in the above-captioned proceedings.

As evidenced by the enclosed Certificate of Service, all known parties will be served, as indicated.

If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Erin K. Fure

Erin K. Fure
Assistant Small Business Advocate
Attorney ID No. 312245

Enclosures
cc: PA PUC Secretary Rosemary Chiavetta (Cover Letter & Certificate of Service only)
Brian Kalcic
Parties of Record

OSBA STATEMENT NO. 1-S

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
	:	
v.	:	**Docket No. R-2021-3025206**
	:	**Docket No. R-2020-3025207**
	:	
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	:	
WATER AND WASTEWATER DIVISIONS		

Surrebuttal Testimony and Exhibit of

BRIAN KALCIC

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

Revenue Allocation
Rate Design

Date Served: September 3, 2021

Date Submitted for the Record: _____

Q. Please state your name and business address.

A. Brian Kalcic, 225 S. Meramec Avenue, St. Louis, Missouri 63105.

Q. Have you previously submitted testimony in this proceeding?

A. Yes, I have.

Q. What is the subject of your surrebuttal testimony?

A. I will respond to the water and wastewater rebuttal testimony submitted by CUPA witness Andrew Dickson.

<u>CUPA Witness Dickson</u>

Water Service

Q. Did CUPA update its filed water service rate design in rebuttal testimony?

A. Yes. As shown in CUPA W Rebuttal Exhibit AWD-1R, CUPA reduced its filed public hydrant charge in order to be consistent with Section 1328 of the Public Utility Code. The Company also revised its filed availability and customer charges upward to recover the foregone revenue associated with its reduced hydrant charge. There are no changes to CUPA's filed consumption charges, and the Company continues to advocate for complete consolidation of its Tamiment system rates at the conclusion of this proceeding.

Q. Does CUPA's revised rate design impact the Company's filed revenue allocation proposal?

A. Yes. Schedule BK-1-S summarizes the Company's revised class revenue allocation proposal. Page 1 shows CUPA's revised revenue allocation proposal on a total system basis, while the Company's revised increases to its Consolidated and Tamiment rate areas are shown on pages 2 and 3, respectively.

Q. How does CUPA's revised revenue allocation compare to its filed proposal shown in Schedule BK-1 of Exhibit BK-1?

A. As expected, a comparison of page 1 of Schedule BK-1-S to page 1 of Schedule BK-1 shows that the Company's revised rate design would shift $44,163 of revenue responsibility from the Public Fire class to the non-fire classes.

In addition, a comparison of pages 2-3 of the same schedules shows that the Company's revised rate design would further exacerbate the proposed increase to CUPA's Tamiment service territory stemming from rate consolidation. More specifically, under the Company's revised rate design, Tamiment water customers would now receive an overall increase of 83.8% (Schedule BK-1-S, page 3 of 3) compared to an original filed increase of 80.0% (Schedule BK-1, page 3 of 3).

Q. Do you agree with CUPA's revised rate design proposal?

A. In part. I agree with the Company's proposal to reduce its filed public hydrant charge but, as discussed below, I continue to disagree with CUPA's proposal to consolidate its Tamiment and Consolidated rate areas.

Q. On pages 4-5 of CUPA W Statement No. 4-R, Mr. Dickson argues that full consolidation of the Tamiment rate area is appropriate at this time since i) Tamiment has not experienced a rate increase for over ten years and ii) if Tamiment were a stand-alone system, its water rates would need to increase by over 185%. Do you agree?

A. No. The decision to consolidate a rate area in a given proceeding should be based primarily on the size of the rate increase associated with full rate consolidation. If rate consolidation can be achieved without imposing undue rate impacts on affected customers, then rate consolidation should go forward, independent of the amount of time that has transpired since the area's last rate adjustment. Conversely, if full rate consolidation would cause rate shock, then the process of rate consolidation should be carried out over two or more rate proceedings, once again independent of the amount of time that has transpired since the area's last rate adjustment.

Similarly, I would argue that the stand-alone increase otherwise applicable to a given rate area is immaterial to the issue of rate consolidation, inasmuch as rate consolidation is grounded on the principle of single tariff pricing, under which utility rates are based on system average rather than stand-alone costs.

Q. Do you find that CUPA's rate consolidation proposal in this proceeding would result in rate shock?

A. I do. As shown on page 3 of Schedule BK-1-S, CUPA is now proposing to increase its Tamiment rates by an average of 83.8%, or 2.27 times its requested system average increase of 36.9%. In order to mitigate rate impacts on customers in the

Tamiment rate area, the Commission should reject CUPA's rate consolidation proposal.

Q. Continuing on page 5 of his rebuttal testimony, Mr. Dickson claims that you appear "not to address the shortfall in revenue that partial consolidation" in your proposal would create. Is Mr. Dickson correct?

A. No. My recommendation in support of partial consolidation of the Tamiment rate area would not result in any revenue shortfall to the Company.[1] Mr. Dickson's comment may be alluding to the *initial* revenue shortfall that would be temporarily created by setting Tamiment consumption charges $2.075 (i.e., half of $4.15) per thousand gallons lower than Consolidated consumption charges in CUPA's proposed rate design. However, that initial revenue shortfall would be eliminated by subsequently increasing *all* consumption charges by the amount necessary to eliminate the shortfall, while maintaining the differential in the Consolidated and Tamiment consumption charges at $2.075 per thousand gallons.

Wastewater Service

Q. On pages 3 of CUPA WW Statement No. 4-R, Mr. Dickson argues that you have not demonstrated that the impact on non-Tamiment wastewater customers from not consolidating Tamiment rates is significant enough to

[1] See OSBA Statement No. 1 at page 12, lines 13-20.

warrant "complications of CUPA's tariff (i.e., maintaining separate rates for Tamiment customers)." What is your response?

A. I agree that full consolidation of Tamiment wastewater rates would not impose rate shock on non-Tamiment customers.[2] However, as I discuss on page 15 of my direct testimony, consolidation of wastewater rates would *favor* Tamiment system customers. In order to be consistent with my recommendation to not fully consolidate water rates, which would benefit Tamiment customers, I also recommend that Tamiment wastewater rates not be fully consolidated, in order to provide some rate design benefits that flow in the other direction, i.e., to *non-Tamiment* customers. In other words, my recommendation with respect to partial consolidation of Tamiment wastewater rates is intended solely to provide a degree of balance with respect to the overall benefits that flow to Tamiment and non-Tamiment customers under the OSBA's partial rate consolidation proposals.

Q. Does this conclude your surrebuttal testimony?

A. Yes.

[2] See Schedule BK-2 of Exhibit BK-1.

EXHIBIT BK-1S

Schedule BK-1-S

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation on Rebuttal of its
Requested Increase in Total Base Rate Water Revenue
Basis: Total System under Consolidated Rates
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,963,901	$675,711	34.4%
2	Commercial	$35,353	$23,502	66.5%
3	Availability	$35,394	$35,297	99.7%
4	Public Fire	$20,929	$23,243	111.1%
5	Total Company	$2,055,577	$757,752	36.9%

$757,517	Target
$235	Rounding

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1R.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation on Rebuttal of its
Requested Increase in Total Base Rate Water Revenue
Basis: Currently Consolidated Service Territories
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,709,788	$488,675	28.6%
2	Commercial	$26,978	$6,415	23.8%
3	Availability	$10,282	($1,662)	-16.2%
4	Public Fire	$20,929	$23,243	111.1%
5	Total	$1,767,976	$516,670	29.2%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1R.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation on Rebuttal of its
Requested Increase in Total Base Rate Water Revenue
Basis: Tamiment Service Territory
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue 1/	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$254,114	$187,036	73.6%
2	Commercial	$8,375	$17,087	204.0%
3	Availability	$25,112	$36,959	147.2%
4	Public Fire	$0	$0	-
5	Total	$287,600	$241,082	83.8%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1R.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**Docket No. R-2021-3025206**
	:	**Docket No. R-2021-3025207**
	:	
Community Utilities of Pennsylvania, Inc. Water Divisions	:	
Community Utilities of Pennsylvania, Inc. Wastewater Divisions	:	

VERIFICATION

I, Brian Kalcic, hereby state that the facts set forth in my Surrebuttal Testimony labeled OSBA Statement No. 1-S are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities).

Date: September 2, 2021

(Signature)

Brian Kalcic

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**R-2021-3025206**
	:	**R-2021-3025207**
Community Utilities of PA, Inc.	:	
Water/Wastewater	:	

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email (*unless other noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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/s/ Erin K. Fure

_____
Erin K. Fure
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DATE: September 3, 2021

I&E Statement No. 1-SR
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WATER DIVISION

Docket No. R-2021-3025206

Surrebuttal Testimony

of

Zachari Walker

Bureau of Investigation & Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

CASH WORKING CAPITAL

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Zachari Walker, and my business address is Pennsylvania Public Utility Commission, 400 North Street, Harrisburg, PA 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

Q. ARE YOU THE SAME ZACHARI WALKER WHO SUBMITTED I&E STATEMENT NO. 1 AND I&E EXHIBIT NO. 1?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of Community Utilities of Pennsylvania, inc. Water Division (CUPA W or Company) witnesses Perry Brown (CUPA W Statement No. 2-R) and David Clark (CUPA W Statement No. 3-R).

Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN ACCOMPANYING EXHIBIT?

A. Yes. I&E Exhibit No. 1-SR accompanies this surrebuttal testimony. Additionally, I refer to my direct testimony and its accompanying exhibit in this surrebuttal testimony (I&E Statement No. 1 and I&E Exhibit No. 1).

OPERATING AND MAINTENANCE EXPENSE ADJUSTMENTS

Q. PLEASE SUMMARIZE THE COMPANY'S UPDATED REQUESTED REVENUE INCREASE.

A. The Company updated its requested gross operating revenue increase of $757,517[1] to $753,939[2] for the Fully Projected Future Test Year (FPFTY) ending December 31, 2022, in rebuttal testimony.

Q. PLEASE SUMMARIZE YOUR ADJUSTMENTS AS CONTAINED IN THIS SURREBUTTAL TESTIMONY.

A. The following table summarizes my recommended adjustments to the Company's updated position:

[1] CUPA W Exhibit DMC-1, Section 1, p. 11.
[2] CUPA W Exhibit DMC-1R, Section 1, p. 11.

	Company Claim	I&E Recommended Allowance	I&E Adjustment
O&M Expenses:			
Employee Pensions and Benefits	$111,906	$79,414	($32,492)
Chemical Expense	$113,899	$74,166	($39,733)
Materials, Supplies, and Other Maintenance Expense	$116,943	$98,751	($18,192)
Rate Case Expense	$39,437	$29,578	($9,859)
Total O&M Adjustments			**($100,276)**
Rate Base:			
Cash Working Capital	$200,399	$184,021	($16,378)
Deferred Charges – Meters NBV	$75,983	$72,543	($3,440)
Total Rate Base Adjustments			**($19,818)**

SUMMARY OF I&E OVERALL UPDATED POSITION

Q. WHAT IS I&E'S TOTAL UPDATED RECOMMENDED REVENUE REQUIREMENT?

A. I&E's updated total recommended revenue requirement is $2,622,683. This recommended revenue requirement represents an increase of $550,938 to the Company's claimed present rate revenues of $2,071,745.[3] This total recommended allowance incorporates my adjustments made in this testimony to operating and maintenance (O&M) expenses and rate base, and those recommended adjustments made in the testimony of I&E witnesses Christopher Keller[4] (I&E Statement No. 2) and Esyan Sakaya (I&E Statement No. 3). Note that my overall position captures a discrepancy between the Company's

[3] CUPA W Exhibit DMC-1R, Section 1, p. 11.

[4] As explained in I&E Statement No. 2-SR, I&E is withdrawing its primary recommendation of a 0% return on equity in this proceeding.

acceptance of witness Sakaya's adjustment of deferred charges for the amortization of the net book value of Penn Estates' meters that was inadvertently excluded from that testimony. The adjustment recommended by I&E witness Sakaya resulted in an adjustment to rate base of $20,646[5], but the amount reflected in the Company rebuttal position is $17,206[6]. The additional $3,440 ($20,646 - $17,206) adjustment to rate base is included in my overall position statement in this testimony.

Also, to clarify, while I&E witness Keller recommended a 0.0% return on equity as I&E's primary position in Direct Testimony, I&E is withdrawing that recommendation in Surrebuttal Testimony given the Company's responsive testimony to the service concerns raised at the public input hearing.

An updated calculation of the I&E recommended revenue requirement is shown below:

[5] I&E Statement No. 3, p. 8.
[6] CUPA W Exhibit DMC-1R, Section 1, p. 14.

Community Utilities of PA Inc. - Water		TABLE I			
R-2021-3025206		INCOME	SUMMARY		
	12/31/22	INVESTIGATION & ENFORCEMENT			
	Proforma	[----------			----------]
	Present Rates	Adjustments	Present Rates	Allowances	Proposed
	$	$	$	$	$
Operating Revenue	2,071,745	0	2,071,745	550,938	2,622,683
Deductions:					
O&M Expenses	1,562,087	-131,026	1,431,061	4,022	1,435,083
Depreciation	308,972	0	308,972		308,972
Taxes, Other	74,263	0	74,263	3,636	77,899
Income Taxes:					
Current State	-11,348	13,181	1,833	54,274	56,107
Current Federal	-21,471	24,941	3,470	102,691	106,161
Deferred Taxes	0	0	0		0
ITC	0	0	0		0
Total Deductions	1,912,503	-92,904	1,819,599	164,623	1,984,222
Income Available	159,242	92,904	252,146	386,315	638,461
Rate Base	9,075,999	-19,818	9,056,181	0	9,056,181
Rate of Return	1.75%		2.78%		7.05%

EMPLOYEE PENSIONS AND BENEFITS

Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY FOR EMPLOYEE PENSIONS AND BENEFITS.

A. I recommended an allowance of $79,414 or a reduction of $32,576 ($111,990 - $79,414) to the Company's FPFTY claim. This recommendation was based on the historic decline in employee pensions and benefits as a percent of total salaries and wages.[7]

[7] I&E Statement No. 1, p. 8.

1 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

2 A. Yes. CUPA witness Perry Brown disagrees with my recommendation.

3

4 **Q. PLEASE SUMMARIZE MR. BROWN'S RESPONSE.**

5 A. Mr. Brown opines my approach to determine a going forward level of expense
6 ignores the spirit of a fully projected future test year.[8] He states the employee
7 pensions and benefits claim contains two components, retirement benefits and
8 healthcare benefits.[9] According to Mr. Brown, retirement benefits are based on a
9 percentage of each employee's salary while healthcare benefits are based on
10 projected costs per employee.[10] Along with Mr. Brown's response, he includes a
11 table displaying retirement costs at the Company, MidAtlantic, and
12 Midwest/MidAtlantic Region levels of allocation and an exhibit displaying
13 information pertaining to the Company's employee pension and benefits.[11]

14

15 **Q. WHAT IS YOUR RESPONSE TO MR. BROWN'S REBUTTAL**
16 **TESTIMONY CONCERNING EMPLOYEE PENSIONS AND BENEFITS?**

17 A. While my adjustment did initially rely on historical data to forecast an appropriate
18 level for future employee pension and benefit costs, I also relied on CUPA's
19 forecasted level of salaries and wages. Mr. Brown does not include a breakdown

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[8] CUPA W Statement No. 2-R, p. 3.
[9] CUPA W Statement No. 2-R, p. 3.
[10] CUPA W Statement No. 2-R, p. 3.
[11] CUPA W Statement No. 2-R, pp. 3-4 and CUPA W & WW Exhibit No. PB-2R and PB-3R – CONFIDENTIAL.

of each portion of employee pensions and benefits, specifically retirement benefits and healthcare benefits. Furthermore, the employee guide does not provide an outline of the healthcare benefit costs incurred by the Company. Likewise, a table containing levels of cost allocation without outlining the calculation allocation does not provide retirement costs incurred by the Company. Additionally, "CUPA W & WW Exhibit No. PB-2R" does not aid in determining costs incurred by the Company relating to employee pension and benefits expense in a comprehensible way.

Q. DID ANY COMPANY WITNESS UPDATE THE CUPA WATER CLAIM IN REBUTTAL TESTIMONY?

A. Yes. CUPA witness David Clark indicates an $84 reduction to employee pensions and benefits for CUPA WW without any specific explanation adjusting the Company's original claim of $111,990 to $111,906 in rebuttal testimony.[12]

Q. DO YOU AGREE WITH THE COMPANY'S UPDATED CLAIM?

A. No.

[12] CUPA W Statement No. 3-R, p. 3.

Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR EMPLOYEE PENSIONS AND BENEFITS?

A. Yes. I continue to recommend an allowance of $79,414; however, as noted above, in rebuttal testimony, the Company updated its claim to $111,906.[13] Consequently, my adjustment recommendation is updated to $32,492 ($111,906 - $79,414).

PURCHASED POWER EXPENSE

Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY FOR PURCHASED POWER EXPENSE.

A. I recommended an allowance of $75,282 or a reduction of $30,828 ($106,110 - $75,2822) to the Company's claim. My recommendation to average the historic costs smooths the historic years' expense fluctuation, while recognizing effects of the 2019 acquisition of Tamiment Water Company and the Company's forecasted decrease of FPFTY purchased power expense due to contracting a new power supplier, Integrity Energy.[14]

Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?

A. Yes. CUPA witness David Clark disagrees with my recommendation.

---

[13] CUPA W Statement No. 3-R, p. 3.
[14] I&E Statement No. 1, pp. 9-10.

Q. SUMMARIZE MR. CLARK'S RESPONSE TO YOUR RECOMMENDATION.

A. Mr. Clark recognizes my method used to calculate the adjustment for purchased power expense is similar to the method used by the Company.[15] However, Mr. Clark asserts this calculation should be used consistently with both water and wastewater divisions.[16] Mr. Clark also states that a change in the general ledger account structure occurred due to a change in accounting software.[17] This resulted in allocation differences between the two divisions.[18]

Q. WHAT IS YOUR RESPONSE TO MR. CLARK'S REBUTTAL TESTIMONY CONCERNING PURCHASED POWER EXPENSE?

A. My use of normalization to moderate the historic fluctuation in order to forecast an appropriate future level of expense is an appropriate approach. This is evident as Mr. Clark proposes to use this same method and admits the Company calculates its forecast in a similar manner.[19] However, I do recognize the importance of consistency regarding the water and wastewater divisions and the allocation methodology utilized by CUPA.

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[15] CUPA W Statement No. 3-R, p. 6.
[16] CUPA W Statement No. 3-R, p. 6.
[17] CUPA W Statement No. 3-R, p. 6.
[18] CUPA W Statement No. 3-R, p. 6.
[19] CUPA W Statement No. 3-R, p. 6.

Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR PURCHASED POWER EXPENSE?

A. Yes. After reviewing the rebuttal testimony presented, I accept that consistency between the water and wastewater divisions is necessary and therefore withdraw my recommended reduction to purchased power expense.

Q. DOES THE WITHDRAWAL OF YOUR RECOMMENDATION AFFECT THE VALIDITY OF OTHER I&E WITNESSES' RECOMMENDATIONS TO REDUCE PURCHASED POWER EXPENSE?

A. No, it does not. It should be noted that the withdrawal of my recommendation does not invalidate any adjustment being proposed by I&E witness Esyan Sakaya in I&E Statement No. 3.

<u>CHEMICAL EXPENSE</u>

Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY FOR CHEMICAL EXPENSE.

A. I recommended an allowance of $74,166 or a reduction of $39,733 ($113,899 - $74,166) to the Company's claim.[20] It should be noted that this recommended allowance does not reflect the adjustment being proposed by I&E witness Esyan Sakaya in I&E Statement No. 3. My recommendation to average the historic costs

[20] I&E Statement No. 1, pp. 13-14.

smooths the historic years' expense fluctuation, while recognizing factors that affect chemical expense.

Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?

A. Yes. CUPA witness David Clark disagrees with my recommendation.

Q. SUMMARIZE MR. CLARK'S RESPONSE.

A. Mr. Clark states the basis for the Company's claim as follows: forecast by unit demand for each chemical type, forecasted unit cost for each chemical, changes in supplier costs, delivery costs, and forecasted demand requirements for the Tamiment system.[21] Mr. Clark continues to propose the original claim of $113,899.[22]

Q. WHAT IS YOUR RESPONSE TO MR. CLARK'S POSITION ON YOUR RECOMMENDED CHEMICAL EXPENSE ADJUSTMENT?

A. The practice of normalizing historic data to predict future levels of expense is common and appropriate. This is especially true in the case of the Company's chemical expense claim due to the historic increases of this expense.

[21] CUPA W Statement No. 3-R, p. 8.
[22] CUPA W Statement No. 3-R, p. 9.

Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR CHEMICAL EXPENSE?

A. No. I continue to recommend an allowance of $74,166 or a reduction of $39,733 ($113,899 - $74,166) for chemical expense.

Q. IF THE COMMISSION DECIDES TO REJECT MR. SAKAYA'S RECOMMENDED REDUCTION TO CHEMICAL EXPENSE, HOW WILL YOUR ADJUSTMENT BE IMPACTED?

A. If the Commission rejects Mr. Sakaya's $8,002 adjustment to reduce the cost of chemical expense for excess unaccounted for water, my recommended adjustment should be increased to $47,735 ($39,733 + $8,002).

<u>MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE</u>

Q. SUMMARIZE YOUR RECOMMEDATION IN DIRECT TESTIMONY FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE.

A. I recommended an allowance of $98,751 or a reduction of $18,192 ($116,943 - $98,751) to the Company's claim. This recommendation is a disallowance of the $18,192 FPFTY deferred maintenance expense. Routine operating expenses are not appropriately subjected to deferral treatment, representing an out of period

1 expense. Therefore, the Company should not be granted permission to recover
2 prior period routine operating expenses.[23]
3
4 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**
5 A. Yes. CUPA witness David Clark disagrees with my recommendation.
6
7 **Q. SUMMARIZE MR. CLARK'S RESPONSE.**
8 A. Mr. Clark states that materials, supplies, and other maintenance expenses do not
9 recur annually and suggests these expenses are most accurately recognized equally
10 over the length of their life.[24] Mr. Clark contends that disallowance of these
11 expenses does not allow the utility the opportunity to recover the cost of these
12 expenses.[25]
13
14 **Q. WHAT IS YOUR RESPONSE TO MR. CLARK'S ASSERTIONS?**
15 A. It is inappropriate for the Company to defer prior year expenses to the FPFTY
16 without proper justification or prior Commission approval for such deferrals.
17 Additionally, per Mr. Clark's testimony, these are known and measurable routine
18 business expenses;[26] therefore, they are not extraordinary in nature. Given the
19 lack of prior approval and the nature of the expenses, the Company's $18,192

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[23] I&E Statement No. 1, pp. 16-17.
[24] CUPA W Statement No. 3-R, p. 10.
[25] CUPA W Statement No. 3-R, p. 10.
[26] CUPA W Statement No. 3-R, p. 10.

deferred maintenance expense claims as a component of materials, supplies, and other maintenance expense should be disallowed.

Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE?

A. No. I continue to recommend disallowance of the $18,192 deferred maintenance expense which reduces the Company's materials, supplies, and other maintenance expense claim. My recommended allowance for this is expense remains $98,751 ($116,943 - $18,192).

<u>RATE CASE EXPENSE</u>

Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY FOR RATE CASE EXPENSE.

A. First, I recommended the Company normalize its rate case expense as opposed to amortizing the expense. Subsequently, I recommended that the unamortized rate case expense ($28,525) (as included in the O&M portion of the claim) be disallowed as this is not consistent with normalization treatment. The removal of the unamortized rate case resulted in a total rate case expense of $118,312 normalized over four years, yielding an annual rate case expense allowance of $29,578. My recommendation decreased rate case expense by $7,131 ($36,709 - $29,578) annually. Finally, and to keep the Company's allowance consistent with

normalization treatment, I recommended the $118,312 deferred rate case expense be disallowed for rate base treatment.[27]

Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?

A. Yes. CUPA witness Perry Brown responded to my recommendation.

Q. PLEASE SUMMARIZE MR. BROWN'S RESPONSE.

A. Mr. Brown states the Company accepts my recommendations to normalize rate case expense and remove unamortized rate case expense from the normalized level of rate case expense.[28] Mr. Brown also explains that the Company never actually included any deferred rate case expense in its rate base claim.[29] Lastly, the Company is proposing to adjust the normalization period to three years from four years.[30]

Q. WHAT IS THE COMPANY'S UPDATED CLAIM BASED ON THE CHANGE TO A THREE-YEAR NORMALIZATION PERIOD?

A. The Company's updated claim is $39,437 ($118,312÷ 3 years) based on dividing the Company's total claim over three years.

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[27] I&E Statement No. 1, pp. 21-23.
[28] CUPA W Statement No. 2-R, p. 5.
[29] CUPA W Statement No. 2-R, p. 6.
[30] CUPA W Statement No. 2-R, pp. 5-6.

1 **Q. WHAT IS THE BASIS FOR THE COMPANY'S NORMALIZATION**
2 **PERIOD ADJUSTMENT?**
3 A. Mr. Brown asserts it is appropriate for CUPA to adjust the proposed normalization
4 period as a four-year normalization period would not allow the Company the
5 opportunity to recover the cost of rate case expense before its next rate case based
6 on historic rate case filing frequency.[31]
7
8 **Q. WHAT IS YOUR RESPONSE TO MR. BROWN'S ASSERTION?**
9 A. Upon review of Mr. Brown's rebuttal testimony, I realized I made a miscalculation
10 of the filing frequency for each division, which led me to believe the proposed
11 four-year normalization period was conservative.[32] Thus, I did not recommend an
12 adjustment to the normalization period. Correcting the error revealed the historic
13 rate case filing frequency for CUPA's water division is four years and for CUPA's
14 wastewater division is five years.[33] Recognizing the prudence of consolidating
15 these rate case filings, a historic consolidated rate case filing frequency is still
16 larger than the Company's initial claim of four years.[34] With these statements
17 considered, I continue to recommend the originally proposed normalization period
18 of four years, which is conservative in nature.

[31] CUPA W Statement No. 2-R, p. 6.
[32] I&E Exhibit No. 1-SR, Schedule 1.
[33] I&E Exhibit No. 1-SR, Schedule 2.
[34] I&E Exhibit No. 1-SR, Schedule 2.

1 Further, Mr. Brown still seems to be confusing normalization with
2 amortization in his recommendation to shorten the "recovery period."
3 Normalization does not recover the current rate case expense; it provides for an
4 ongoing amount of rate case expense in base rates to prospectively fund rate case
5 costs between rate case filings. It is appropriate to use the historic filing frequency
6 as I have done to establish the allowance included in base rates for prospective
7 recovery of future rate case costs.
8
9 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
10 **RATE CASE EXPENSE?**
11 A. Yes. First, I recognize the Company's acceptance of my recommendations to use
12 normalization for ratemaking purposes and to remove unamortized rate case
13 expense from the current level of rate case expense. Secondly, I do not agree with
14 the Company's proposal to adjust the normalization period to three years; I
15 continue to recommend a four-year normalization period as explained above.
16 Accordingly, my recommendation is updated to a reduction of $9,859 ($39,437 -
17 $29,578) to account for the Company's revised claim in rebuttal testimony.
18 Finally, I accept Mr. Brown's explanation about deferred rate case expense of
19 $118,312 never being included in the Company's rate base claim, therefore, I
20 withdraw my recommendation to decrease rate base by $118,312.

1 **CASH WORKING CAPITAL**

2 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**

3 **FOR CASH WORKING CAPITAL.**

4 A. I recommended a cash working capital (CWC) allowance of $180,547 that is

5 adjusted to recognize the expense adjustments recommended in Mr. Sakaya's and

6 my direct testimony for those expenses included in the cash working capital

7 computation.

8

9 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

10 A. Yes. CUPA witness David Clark addresses CWC in his rebuttal testimony, and he

11 disagrees with my CWC recommendation based on CUPA's disagreement with my

12 recommended adjustments to individual O&M expenses.

13

14 **Q. WHAT IS THE COMPANY'S UPDATED CWC CLAIM?**

15 A. Mr. Clark states the Company's updated CWC claim is $200,399 to include all

16 O&M expense adjustments included in the Company's rebuttal testimony.[35]

17

18 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**

19 A. No. Based on my disagreement and I&E witness Esyan Sakaya's disagreement

[35] CUPA W Statement No. 3-R, pp. 3-4.

with certain individual O&M expenses as explained above and in I&E Statement No. 3, I have updated my recommendation for CWC.

Q. SUMMARIZE WHERE EACH OF THE I&E RECOMMENDED O&M EXPENSE ADJUSTMENTS ARE REFLECTED IN THE CWC COMPUTATION.

A. The adjustments are as follows:

O&M Expenses	Adjustment
Employee Pensions & Benefits	($32,492)
Chemical Expense ($39,733 + $8,002)	($47,735)
Materials, Supplies, and Other Maintenance Expense	($18,192)
Rate Case Expense	($9,859)
Purchase Power Expense	($7,455)
Purchased Water Expense	($15,293)
Total	**($131,026)**

The sum of all O&M adjustments reduces the Company's CWC amount by $16,378 calculated as follows: [(45 x $131,026) ÷ 360].

Q. SUMMARIZE YOUR UPDATED RECOMMENDED ALLOWANCE FOR CWC.

A. I recommend an updated CWC allowance of $184,021 or a reduction of $16,378 ($200,399 - $184,021) to the Company's claim. This change recognizes the expense adjustments recommended in Mr. Sakaya's and my surrebuttal testimony for those expenses included in the cash working capital computation.

Q. DOES YOUR RECOMMENDED CWC ALLOWANCE REPRESENT A FINAL RECOMMENDED ALLOWANCE?

A. No. All adjustments to the Company's claims for revenues, expenses, taxes, and rate base must be consistently brought together in the Administrative Law Judges' Recommended Decision and again in the Commission's Final Order. This process, which is known as iteration, effectively prevents the determination of a precise calculation until all adjustments have been made to the Company's claim.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

I&E Statement No. 1-SR
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WATER DIVISION

Docket No. R-2021-3025206

Exhibit to Accompany

the

Surrebuttal Testimony

of

Zachari Walker

Bureau of Investigation & Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

CASH WORKING CAPITAL

Filing Frequency (With Miscalculation)

Wastewater Division

System	Docket	Filing Date	Months	Years
Community Utilities of Pennsylvania (Wastewater)	R-2021-3025206	4/12/2021		
Community Utilities of Pennsylvania (Wastewater)	R-2019-3008948	4/1/2019	24	2.00
Penn Estates (Wastewater)	R-2013-2370455	6/28/2013	69	5.75
Utilities Inc Pennsylvania	R-2009-2117402	6/30/2009	48	4.00
Penn Estates (Wastewater)	R-2009-2117740	6/29/2009	48	4.00
		Historic Frequency	47.25	3.94

Water Division

System	Docket	Filing Date	Months	Years
Community Utilities of Pennsylvania (Water)	R-2021-3025207	4/12/2021		
Community Utilities of Pennsylvania (Water)	R-2019-3008947	4/1/2019	24	2.00
Community Utilities of Pennsylvania (Water)	R-2016-2538660	4/6/2016	36	3.00
Penn Estates (Water)	R-2011-225159	9/30/2011	54	4.50
Utilites of Westgate	R-2009-2117389	6/30/2009	27	2.25
		Historic Frequency	35.25	2.94

Total Company

	Months	Years
Historic Frequency	41.25	3.44

Filing Frequency (With Correction)

Wastewater Division

System	Docket	Filing Date	Months Preceding Sequential Filing	Years Sequential Filing
Community Utilities of Pennsylvania (Wastewater)	R-2021-3025206	4/12/2021		
Community Utilities of Pennsylvania (Wastewater)	R-2019-3008948	4/1/2019	24	2.00
Penn Estates (Wastewater)	R-2013-2370455	6/28/2013	69	5.75
Utilities Inc Pennsylvania	R-2009-2117402	6/30/2009	117	9.75
Penn Estates (Wastewater)	R-2009-2117740	6/29/2009	48	4.00
		Historic Frequency	64.5	5.38

Water Division

System	Docket	Filing Date	Months Preceding Sequential Filing	Years Sequential Filing
Community Utilities of Pennsylvania (Water)	R-2021-3025207	4/12/2021		
Community Utilities of Pennsylvania (Water)	R-2019-3008947	4/1/2019	24	2.00
Community Utilities of Pennsylvania (Water)	R-2016-2538660	4/6/2016	36	3.00
Penn Estates (Water)	R-2011-225159	9/30/2011	54	4.50
Utilites of Westgate	R-2009-2117389	6/30/2009	81	6.75
		Historic Frequency	48.75	4.06

Total Company

	Months	Years
Historic Frequency	56.63	4.72

I&E Statement No. 2-SR
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA – WATER DIVISION

Docket No. R-2021-3025206

Surrebuttal Testimony

of

Christopher Keller

Bureau of Investigation & Enforcement

Concerning:

Rate of Return

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1 **<u>INTRODUCTION OF WITNESS</u>**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christopher Keller. My business address is Pennsylvania Public Utility
4 Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg, PA
5 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the
9 Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

10

11 **Q. ARE YOU THE SAME CHRISTOPHER KELLER WHO SUBMITTED THE**
12 **DIRECT TESTIMONY CONTAINED IN I&E STATEMENT NO. 2 AND I&E**
13 **EXHIBIT NO. 2?**

14 A. Yes.

15

16 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

17 A. The purpose of my surrebuttal testimony is to address statements made by
18 Community Utilities of Pennsylvania Inc. – Water Division (CUPA or Company)
19 witness Dylan W. D'Ascendis (CUPA Statement No. 5-R) in his rebuttal testimony
20 regarding rate of return topics including the cost of common equity and the overall
21 fair rate of return, which will be applied to the Company's rate base. Additionally, I
22 will also address comments made by Mr. D'Ascendis, CUPA witness Emily Long
23 (CUPA Statement No. 7-R), and LaQuisha M. Parks (CUPA Statement No. 8-R)

regarding the Company's ability to provide adequate and reasonable service to customers and my recommendation for a 0.00% rate of return based on inadequate and unreasonable service.

Q. DID THE COMPANY PROVIDE AN UPDATE TO ITS RATE OF RETURN?

A. Yes. Mr. D'Ascendis performed a similar analysis as to what was included in his direct testimony and exhibit using more recent data available as of August 13, 2021. Mr. D'Ascendis also updated his proxy group to remove Essential Utilities, Inc. as it no longer met his criteria that 70% or greater of its total assets should be attributable to regulated water operations. Although Mr. D'Ascendis provided an update to his cost of equity analysis, he does not change his recommendation and continues to recommend a cost of equity of 10.35% (CUPA Statement No. 5-R, pp. 5-6). Below is the Company's rate of return claim (CUPA Schedule DWD-1R, p. 1):

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.93%
Total	100.00%		7.57%

Q. DID THE COMPANY USE A 7.57% ROR TO CALCULATE ITS REQUESTED REVENUE REQUIREMENT?

A. No. CUPA witness David Clark uses an ROR of 7.58% to calculate the Company's requested increase (CUPA W Exhibit No. DMC-1R).

Q. PLEASE EXPLAIN WHY YOU HAVE NOT PERFORMED AN UPDATED ANALYSIS.

A. While I do not dispute Mr. D'Ascendis' use of updated information, it is important to note that financial information from respected and commonly used sources such as Value Line, Yahoo! Finance, Morningstar, Zacks, etc. is updated regularly (monthly, weekly, daily, hourly, etc. depending on the source). At the time of my analysis, I utilized the most recent financial information accessible to me. It should be recognized that it is not always prudent or time conducive in the scope of a rate case to continuously change one's position.

SUMMARY OF MR. D'ASCENDIS' REBUTTAL TESTIMONY

Q. SUMMARIZE MR. D'ASCENDIS' RESPONSE TO YOUR ROR RECOMMENDATIONS.

A. Mr. D'Ascendis disputes my recommendations by first claiming that I failed to consider the results of cost of equity models other than the Discounted Cash Flow (DCF) model. Next, he criticizes my application of the Capital Asset Pricing Model (CAPM), claiming that I have incorrectly relied on the 10-year Treasury Bond for my risk-free rate and have not employed the Empirical CAPM (ECAPM). Mr. D'Ascendis claims that I fail to account for the CUPA's size-specific risk. Mr. D'Ascendis also takes issue with my dismissal of his Non-Price Regulated Proxy Group. Finally, Mr. D'Ascendis opines that the Commission-determined Distribution System Improvement Charge (DSIC) rates should serve as the bare minimum cost of equity in this proceeding.

DSIC RATES

Q. PLEASE SUMMARIZE MR. D'ASCENDIS' THEORY THAT THE DSIC RATE CALCULATED BY THE COMMISSION FOR WATER AND WASTEWATER UTILITIES SHOULD SERVE AS THE MINIMUM AUTHORIZED COST OF EQUITY IN THIS PROCEEDING.

A. Mr. D'Ascendis claims that the cost of equity in a rate case should not be lower than the DSIC rate calculated by the Commission for water and wastewater companies. He makes this assertion on the basis that the DSIC rate applies only to transmission and distribution investments, which are lower risk investments compared to the production and treatment of water and wastewater (CUPA Statement No. 5-R, p. 18).

Q. WHAT IS YOUR RESPONSE TO MR. D'ASCENDIS' ASSERTION THAT THE DSIC RATE CALCUATED BY THE COMMISSION FOR WATER AND WASTEWATER UTILITIES SHOULD SERVE AS THE MINIMUM AUTHORIZED COST OF EQUITY IN THIS PROCEEDING?

A. Mr. D'Ascendis' comparison between the I&E recommended return on equity in this proceeding and the DSIC rate calculated by the Commission for water and wastewater utilities is misguided. The DSIC return for utilities is calculated differently than the equity return in a base rate case. The DSIC rate is designed to encourage its use and to incentivize accelerated pipeline replacement and infrastructure upgrades to bring the existing aging infrastructure closer to meeting safety and reliability requirements in between base rate filings. To suggest the cost of equity must be at or above the DSIC rate in this base rate proceeding is inappropriate and not in the public interest.

Additionally, the DSIC rate establishes a benchmark above which a utility company is considered "overearning." As such, the DSIC rate does not serve as a proper measurement of a subject utility's cost of equity in a rate case proceeding. In fact, 66 Pa. C.S. § 1358(b)(3) states the following:

> The distribution system improvement charge shall be reset at zero if, in any quarter, data filed with the commission in the utility's most recent annual or quarterly earnings report show that the utility will earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the distribution system improvement charge.

Finally, the DSIC mechanism serves to lower a utility's risk because it reduces the lag time in the recovery of a company's capital outlays.

<u>DISCOUNTED CASH FLOW</u>

Q. SUMMARIZE MR. D'ASCENDIS' REBUTTAL TESTIMONY REGARDING YOUR DCF ANALYSIS.

A. Mr. D'Ascendis opines that I have inappropriately relied solely on the DCF model for my cost of equity recommendations (CUPA Statement No. 5-R, p. 7, lines 13-15). Next, he presents two cases where he claims the Commission has considered multiple cost of equity models (CUPA Statement No. 5-R, pp. 10-11). Then, Mr. D'Ascendis argues that market-to-book (M/B) ratios over the past decade have increased significantly for the water industry, and likely cause the DCF results in this proceeding to understate the investor-required return. He argues that the difference between the market value, on which investors evaluate and receive their returns, and the book value, on which regulators authorize returns, will cause the market-based

results of the DCF, which are applied to the book value capital structure, to understate the cost of equity (CUPA Statement No. 5-R, pp. 7-14). Finally, although Mr. D'Ascendis is not advocating for a leverage adjustment to the results of the DCF, he claims he provided the discussion with the purpose of demonstrating the model's limitations and supporting the use of multiple models (CUPA Statement No. 5-R, p. 17, lines 18-24).

<u>ALLEGED SOLE RELIANCE ON THE DCF</u>

Q. PLEASE RESPOND TO MR. D'ASCENDIS' ASSERTION THAT YOU RELIED SOLELY ON THE DCF.

A. As stated in my direct testimony, while my recommendation was based on the results of my DCF analysis, I also employed the CAPM as a comparison. The result of my DCF analysis is 9.24% while the result of my CAPM analysis is 9.56%, both of which are significantly lower than the Company's claim of 10.35%. For the reasons discussed in my direct testimony, the DCF method is the most reliable (I&E Statement No. 2, pp. 13-14). I have considered the fact that no method can perfectly predict the return on equity, which is why I also use the CAPM as a comparison to the DCF. Although no one method can capture every factor that influences an investor, including the results of methods less reliable than the DCF does not make the end result more reliable or more accurate. As a result, I stand by my method of using the DCF with a CAPM comparison, which is consistent with the methodology historically

used by the Commission in base rate proceedings, even as recently as 2017, 2018, 2020, and 2021.[1]

Q. WHICH CASES DOES MR. D'ASCENDIS PRESENT WHERE HE CLAIMS THE COMMISSION HAS CONSIDERED MULTIPLE COST OF EQUITY MODELS?

A. Mr. D'Ascendis presents the 2013 Columbia Water Company[2] and the 2014 Emporium Water Company[3] cases to suggest the Commission has considered multiple cost of common equity models (CUPA Statement No. 5-R, pp. 10-11).

Q. WHAT COMMENTS DO YOU HAVE REGARDING THE CASES MR. D'ASCENDIS PRESENTS?

A. First, within the citation Mr. D'Ascendis presents regarding the Columbia Water Company case, the Commission specifically states that it used the DCF method as the foundation in determining the cost of equity (CUPA Statement No. 5-R, p. 10, lines 5-8). Any adjustments to the cost of equity after the fact are at the Commission's discretion and independent of the result of any cost of equity model. Regarding the

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[1] *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company;* Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.;* Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131. *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

[2] *Pa. PUC v. The Columbia Water Company*, Docket No. R-2013-2360798, Order Entered January 23, 2014.

[3] *Pa. PUC v. Emporium Water Company*, Docket No. R-2014-2402324, Order Entered January 28, 2015.

Emporium Water Company case, the Commission simply summarized the recommendations presented by OCA, I&E, and the Company, it did not specifically comment on which model(s) it relied on (CUPA Statement No. 5-R, p. 10, lines 18-37). Again, as stated in my direct testimony, I did in fact employ the CAPM as a comparison to my DCF result and my recommendation is consistent with the methodology historically used by the Commission in base rate proceedings, even as recently as 2017, 2018, 2020, and 2021[4] (I&E Statement No. 2, p. 13, lines 8-12).

MARKET-TO-BOOK RATIO

Q. WHAT DOES MR. D'ASCENDIS CLAIM REGARDING MARKET-TO-BOOK RATIOS IN THIS PROCEEDING?

A. He opines that a M/B ratio above 1.0, which is currently the situation for the proxy group companies, is causing the market based DCF to understate the return required by investors (CUPA Statement No. 5-R, pp. 11-12).

[4] *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company;* Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.;* Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131; *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

Q. DOES A MARKET-TO-BOOK RATIO ABOVE ONE (1.0) CAUSE THE DCF TO INCORRECTLY ESTIMATE THE INVESTOR-REQUIRED RETURN ON EQUITY?

A. No. Although, there are differences between the book value and market value of water utilities, Mr. D'Ascendis' assertion that the difference causes the DCF to undervalue the rate of return assumes that investors are unaware of the difference. The forecasted growth rates used in the DCF are set by analysts based on current conditions and what they expect the future could be for the stock. As Mr. D'Ascendis points out, the current market-to-book ratios for the water proxy group are extraordinarily high compared with the ten-year average. In this scenario, no rational investor would invest in a utility stock that has been trading above book value for several years and be surprised that rates continue to be set based on the book value capital structure. A market-to-book ratio of above 1.0 for utility stocks reflects their value in the market and implies that investors expect future cash flows to be more valuable than the historical accounting value of the company. Since the stock market is impacted by regulatory policies, and the economic and financial conditions, a market-to-book ratio could be less than 1.0 when the stock market is in a depression, or a company is experiencing under-performance, so it is inappropriate to evaluate DCF results with the market-to-book ratio.

CAPITAL ASSET PRICING MODEL

Q. SUMMARIZE MR. D'ASCENDIS' RESPONSE TO YOUR CAPM ANALYSIS.

A. Mr. D'Ascendis disputes my use of the 10-year U.S. Treasury Note as a proxy to

measure the risk-free rate that I use in my CAPM analysis as well as the inputs I chose from Blue Chip forecasts. He also disagrees with my exclusion of the ECAPM method of computing the Company's return on equity (CUPA Statement No. 5-R, p. 21, lines 25-28).

<u>RISK-FREE RATE</u>

Q. WHAT IS MR. D'ASCENDIS' RESPONSE TO YOUR USE OF THE YIELD ON THE 10-YEAR U.S. TREASURY BOND?

A. Mr. D'Ascendis claims his use of the yield on a 30-year U.S. Treasury Bond is more appropriate than my use of the yield on a 10-year Treasury Bond because it better reflects the life of the underlying investment. He also claims that not incorporating the longest projection available is inconsistent with the DCF assumption of a constant rate of dividend growth and the Efficient Market Hypothesis (EMH), which assumes that all available information is considered by investors (CUPA Statement No. 5-R, pp. 22-24).

Q. IS THE LIFE OF THE INVESTMENT THE ONLY FACTOR THAT SHOULD BE CONSIDERED IN THE CHOICE OF A RISK-FREE RATE?

A. No. The risk-free rate is the return that can be earned without accepting any risk, and while the life of the investment can be considered in the choice of risk-free rates, the most important consideration is that the rate be as risk-free as possible. As explained in my direct testimony, I chose the 10-year Treasury Note as it mitigates the short-comings of the short-term Treasury-Bill and the 30-year Treasury Bond (I&E

Statement No. 2, pp. 28-29). Although long-term Treasury Bonds have less risk of being influenced by federal policies, they have substantial maturity risk associated with market risk. In addition, long-term Treasury Bonds bear the risk of unexpected inflation. As such, my choice of a 10-year Treasury Note is appropriate. Further, as also pointed out in my direct testimony, the Commission recently agreed with I&E that the 10-year Treasury Note is the superior measure of the risk-free rate of return.[5]

Q. DOES THE PROJECTED RISK-FREE RATE NEED TO REPRESENT THE LONGEST TIME PERIOD AVAILABLE AS MR. D'ASCENDIS CLAIMS?

A. No. The time period reflected in a projected risk-free rate should include the period in which rates will be in effect. Since CUPA is not setting rates to be applicable far into the future, using projections for seven or more years from now, as Mr. D'Ascendis suggests, is inappropriate (CUPA Statement No. 5-R, p. 23, lines 8-10). The yield on the 10-year Treasury Note is expected to range between 1.80% and 2.10% from the third quarter of 2021 through the third quarter of 2022 and is forecasted to be 2.90% from 2023-2027. For my forecasted CAPM analysis I calculated 2.12%, which is the average of all the yields I observed (I&E Exhibit No. 2, Schedule 12). In addition, the further out into the future one forecasts, the less reliable and more speculative the estimates become; therefore, to give more weight to less reliable estimates would not be prudent. My calculation provides a balance of shorter-term future estimates.

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[5] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 99.

1 **EXCLUSION OF THE ECAPM**

2 **Q. PLEASE SUMMARIZE MR. D'ASCENDIS' RESPONSE TO YOUR**

3 **EXCLUSION OF THE ECAPM IN YOUR ANALYSIS.**

4 A. Mr. D'Ascendis asserts that the empirical Security Market Line (SML) described by

5 the traditional CAPM is not as steeply sloped as the CAPM model predicts and that

6 tests of the CAPM have measured the level of which security returns and betas are

7 related as predicted by the CAPM (CUPA Statement No. 5-R, pp. 24-27).

8

9 **Q. WHY IS THE ECAPM EXCLUDED FROM YOUR ANALYSIS?**

10 A. The ECAPM is a modified version of the CAPM which attempts to address the belief

11 that the actual risk vs. return correlation is flatter than what is predicted by the

12 CAPM. The implication is that the CAPM under-estimates returns with lower levels

13 of risk and over-estimates the returns associated with higher levels of risk. The model

14 entails assigning 25% weight to the market beta and 75% weight to the individual

15 company or proxy group.[6]

16 Additionally, the use of the ECAPM in estimating the cost of capital does not

17 increase the validity of the result but merely adds another measure of subjectivity to

18 the CAPM in an attempt to make the SML more accurate. The ECAPM reduces the

19 purpose of the beta, which is the only company-specific variable in the CAPM model.

20 This additional layer of subjectivity provides an even stronger basis to rely on the

21 DCF as the primary method to calculate a utility's cost of equity.

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[6] David C. Parcell, "The Cost of Capital – A Practitioner's Guide," 2010 Edition, p. 104.

Q. HAVE YOU CHANGED YOUR CAPM RETURN ON EQUITY (ROE) RECOMMENDATION AS A RESULT OF MR. D'ASCENDIS' REBUTTAL TESTIMONY?

A. No. I continue to recommend using my CAPM result of 9.56% (I&E Exhibit No. 2, Schedule 14) as a comparison to my DCF result of 9.24% (I&E Exhibit No. 2, Schedule 10).

<u>SIZE ADJUSTMENT</u>

Q. SUMMARIZE YOUR DIRECT TESTIMONY REGARDING MR. D'ASCENDIS' CLAIM FOR AN ADJUSTMENT FOR THE COMPANY'S SMALL SIZE.

A. In direct testimony, I stated that Mr. D'Ascendis' 100-basis point adjustment is unnecessary because none of the technical literature cited in his direct testimony supporting an adjustment related to the size of a company is specific to the utility industry. Additionally, I presented an article by Dr. Annie Wong that demonstrated there is no need to make an adjustment for the size of a company in utility rate regulation. Finally, the Commission has recently rejected the application of a size adjustment to the cost of equity calculation (I&E Statement No. 2, pp. 35-36).

Q. SUMMARIZE MR. D'ASCENDIS' RESPONSE IN REBUTTAL TESTIMONY REGARDING A SIZE RISK FACTOR ADJUSTMENT.

A. Mr. D'Ascendis opines that firms of smaller size are less able to cope with significant events affecting sales, are less diverse in their operations, and have less financial

flexibility. He supports these statements by pointing to two studies from Fama and French and Duff and Phelps relating the size of a company to its ROE. Mr. D'Ascendis also attempts to discredit a study performed by Dr. Wong, which I&E relied upon in rejection of his size adjustment, by citing a review of her study authored by Thomas M. Zepp. Additionally, Mr. D'Ascendis inaccurately asserts that I&E claims his size risk premium is not specific to utilities because the study he cites utilizes data from the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and National Association of Security Dealers Automated Quotation System (NASDAQ). Finally, Mr. D'Ascendis points to a 2019 Commission order where the Commission considered a size adjustment (CUPA Statement No. 5-R, pp. 27-33).

Q. ARE MR. D'ASCENDIS' ASSERTIONS REGARDING FIRMS OF SMALLER SIZE RELEVANT TO THE REGULATED UTILITY INDUSTRY?

A. No. The study performed by Dr. Wong provides empirical evidence that refutes Mr. D'Ascendis' claim which I will further elaborate upon below.

Q. WHAT ARE YOUR OBSERVATIONS REGARDING THE STUDIES MR. D'ASCENDIS RELIES ON TO SUPPORT HIS CLAIM OF A SIZE ADJUSTMENT?

A. The Fama and French and Duff and Phelps studies are not specific to the utility industry. While I&E relied upon the Fama and French study in this proceeding, as Mr. D'Ascendis correctly points out, the purpose for which I&E cited the study was to demonstrate empirically the shortcomings of the CAPM. The Fama and French

study is irrelevant toward the determination of the size risk factor because it is not specific to the utility industry.

Q. PLEASE COMMENT ON THE REVIEW OF DR. WONG'S STUDY PERFORMED BY DR. ZEPP.

A. The article Mr. D'Ascendis references from Dr. Zepp does not recreate Dr. Wong's study; it simply speculates on other possible reasons for her results and references the results of two other studies. The first study, completed by California Public Utilities Commission Staff in 1991, is not included in the article, and, therefore, Dr. Zepp's opinions cannot be properly evaluated. Dr. Zepp also draws his conclusions about an entire industry based on the second study, which examines the effects of size on only four water utility companies. This article does not contain enough credible evidence to refute Dr. Wong's findings.

Q. PLEASE DISCUSS THE INCORRECT INTERPRETATION MADE BY MR. D'ASCENDIS REGARDING YOUR DIRECT TESTIMONY.

A. Mr. D'Ascendis appears to have mistaken an observation I made in direct testimony as a criticism of his analysis. He incorrectly asserts in rebuttal testimony that I stated his size adjustment is not specific to utilities because the study he cites uses data from the NYSE, AMEX and NASDAQ. However, I merely observed that Mr. D'Ascendis used market information from NYSE, AMEX, and NASDAQ exchanges as a means to calculate his perceived size risk premium for CUPA. This is an important

observation because it is not appropriate to compare highly competitive private companies with regulated, monopolistic, public utilities.

Q. HAVE YOU FOUND FURTHER EVIDENCE TO SUPPORT YOUR RECOMMENDATION REGARDING SIZE ADJUSTMENTS?

A. Yes. The difficulty in predicting the risk effect of a company's size is demonstrated in the variance from year to year of the measurement of difference between the annual returns on the large and small-capitalization stocks of the NYSE/AMEX/NASDAQ in the Ibbotson *Stocks, Bonds, Bills & Inflation: 2015 Yearbook.* As stated on page 100,

> While the largest stocks actually declined in 2001, the smallest stocks rose more than 30%. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and 10th decile returns was far more substantial. The divergence in the performance of small- and large- cap stocks is evident. In 30 of the 89 years since 1926, the difference between the total returns of the largest stocks (decile 1) and the smallest stocks (decile 10) has been greater than 25 percentage points.

Page 109 states,

> In four of the last 10 years, large-capitalization stocks (deciles 1-2 of NYSE/AMEX/NASDAQ) have outperformed small-capitalization stocks (deciles 9-10). This has led some market observers to speculate that there is no size premium. But statistical evidence suggests that periods of underperformance should be expected.

Page 112 states,

> Because investors cannot predict when small-cap returns will be higher than large-cap returns, it has been argued that they do not expect higher rates of return for small stocks.

Q. WHAT IS YOUR RESPONSE TO MR. D'ASCENDIS' REBUTTAL TESTIMONY REGARDING THE REFERENCED COMMISSION ORDER FOR CITIZENS' ELECTRIC COMPANY?

A. The Commission did not in fact award an explicit 100-basis point size adjustment as the Commission determined that there was not enough evidence as to whether size is specifically a risk for utilities:

> Consistent with the foregoing discussion, like the ALJs, we shall not specify an exact size adjustment. Instead, we shall adopt the ALJs' recommendation that Citizens' be awarded a DCF cost of common equity of 9.49%. In our view, this cost of equity is reasonable and strikes an appropriate balance by recognizing the general inverse relationship between a company's size and its risk, while acknowledging that there is not substantial evidence in the record to prove that an explicit size basis point adjustment is warranted in this case.[7]

Finally, as I stated in my direct testimony, the Commission has recently rejected the application of a size adjustment to the cost of equity calculation (I&E Statement No. 2, p. 36).

Q. HAS YOUR RECOMMENDATION REGARDING MR. D'ASCENDIS' SIZE ADJUSTMENT CHANGED SINCE YOUR DIRECT TESTIMONY?

A. No. I continue to recommend that any adjustments in consideration of the Company's size be disallowed.

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[7] *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 103-104.

NON-PRICE REGULATED PROXY GROUP

Q. WHAT WAS YOUR RECOMMENDATION IN DIRECT TESTIMONY CONCERNING MR. D'ASCENDIS' UTILIZATION OF A NON-REGULATED PROXY GROUP?

A. I recommended the Commission reject all analyses performed using the non-price regulated company proxy group as it is highly speculative and subjective. Mr. D'Ascendis' non-regulated proxy group in effect blends the CE approach into the DCF, RP, and CAPM models where I cited that the Commission has ruled on the use of using non-utility companies in comparable groups for the use of the CE approach as being highly speculative (I&E Statement No. 2, pp. 33-34).

Q. SUMMARIZE MR. D'ASCENDIS RESPONSE REGARDING YOUR DISAGREEMENT WITH HIS USE OF A NON-REGULATED PROXY GROUP.

A. In rebuttal testimony, Mr. D'Ascendis attempts to justify the use of the companies contained in his non-regulated proxy group based on the betas and standard errors of the regression being similar to that of the companies in his water company proxy group and therefore opining they are similar to CUPA (CUPA Statement No. 5-R, pp. 39-41).

Q. HAS MR. D'ASCENDIS PROVEN THAT THE RISKS FACED BY HIS NON-REGULATED PROXY GROUP ARE SIMILAR TO THAT OF HIS WATER UTILITY GROUP?

A. No. The risks faced in each industry for the companies used in Mr. D'Ascendis'

unregulated group differ from the risks faced by his water utility group. Specifically, the level of competition between non-price regulated companies and monopolies, which utilities largely are, is too difficult a factor to control. Although beta is an indicator of a company's investment risk in relation to the entire stock market, beta is not a quantification of the total investment risk of a given company. Mr. D'Ascendis' unregulated proxy group may have a beta comparable to that of his water group, but that does not mean the companies face sufficiently similar risks to be used as a substitute for an industry's market. Both beta and the standard error of regression are measures of the past performance of a stock and as such do not necessarily reflect where an industry is going or what risks it is expected to face.

Additionally, the Commission made the following comments in a recent UGI Electric case regarding the CE method, specifically, the use of non-utility companies in comparable groups, and stated,[8]

> With respect to the CE method, as noted above, this cost of equity method utilizes data for non-regulated firms. Thus, by its very nature, determining which companies are comparable is entirely subjective. In addition, the record indicates that the companies UGI utilized in its CE group results in the selection of companies such as Coca-Cola Company, Kellogg Company, and Walmart Stores, Inc.…Each of these companies operate in industries that are very different from a utility company and have significantly more competition, which would require a higher return for the associated additional risk.

[8] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018), p. 105. The Commission has also ruled "[t]he use of nonregulated companies as a comparable group for regulated firms requires numerous unsupportable assumptions which results in a highly speculative finding." *Pennsylvania Public Utility Commission v. Philadelphia Electric Co.* 33 PUR 4th 319, 341 (Pa PUC 1980).

Finally, I am advised by counsel that this premise defies the principle set forth in the *Hope* and *Bluefield cases*[9] that a utility is entitled to a return similar to that being earned by companies with similar risks and uncertainties, but not as high as those earned by highly profitable or speculative ventures.

<u>I&E'S 0.00% RETURN ON EQUITY RECOMMENDATION</u>

Q. SUMMARIZE YOUR DIRECT TESTIMONY REGARDING YOUR RECOMMENDATION FOR A 0.00% ROE.

A. In direct testimony, I recommended a return on equity of 0.00% because the Company is not meeting its obligation to provide adequate and reasonable service to its customers. My recommendation was based on concerns expressed by CUPA customers during the public input hearing where customers raised various concerns regarding water quality, damage to home appliances, and customer service. My recommendation was also based on the Company's Annual Water Quality Reports where the Pennsylvania Department of Environmental Protection (PA DEP) noted violations (I&E Statement No. 2, pp. 19-24).

Q. WHICH COMPANY WITNESSES RESPONDED TO YOUR RECOMMENDATION?

A. As mentioned above, CUPA witness Dylan W. D'Ascendis (CUPA Statement No. 5-R), CUPA witness Emily Long (CUPA Statement No. 7-R), and LaQuisha M. Parks

[9] *See Bluefield Water Works & Improvements Co. v. Public Service Comm. of West Virginia,* 262 U.S. 679,692-93 (1923), and the *FPC v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944).

(CUPA Statement No. 8-R) responded to my recommendation for a 0.00% rate of return based on inadequate and unreasonable service.

Q. SUMMARIZE MR. D'ASCENDIS' RESPONSE IN REBUTTAL TESTIMONY REGARDING A 0.00% ROE.

A. Mr. D'Ascendis states that utilities must have sufficient earnings to attract new capital from investors and my recommendation would have a material impact the Company's ability to meet the customers' needs. Mr. D'Ascendis states a 0.00% ROE would cause investors to invest elsewhere that can offer a higher ROE given their risk level and would restrict the Company's access to capital. Finally, Mr. D'Ascendis states that a 0.00% ROE would affect investors' perception of the Pennsylvania regulatory climate as rating agencies factor the utility's regulatory environment into ratings of public utilities (CUPA Statement No. 5-R, pp. 19-21).

Q. SUMMARIZE MS. LONG'S RESPONSE IN REBUTTAL TESTIMONY REGARDING THE COMPANY'S SERVICE.

A. Ms. Long states that the PA DEP violations in the Company's Annual Water Quality Reports were not related to water quality but were related to items such recordkeeping, monitoring chlorine residuals, failure to submit timely reports to the PA DEP, etc. where the Company has taken steps to remedy these issues. Ms. Long also addresses the customers' complaints stating that the Company received minimal complaint calls from customers, and those that the Company received were adequately addressed. Finally, Ms. Long states that complaints regarding the failure

of grinder pumps were addressed and she explained issues with the grinder pumps were the responsibility of the customer (CUPA Statement No. 7-R, pp. 2-28).

Q. SUMMARIZE MS. PARKS' RESPONSE IN REBUTTAL TESTIMONY REGARDING THE COMPANY'S SERVICE.

A. Ms. Parks states the Company has recently made changes to improve customer service through localizing customer support, increasing customer feedback, and providing customer education and outreach efforts. Additionally, Ms. Parks states the Company has taken steps to improve training and providing feedback to employees. Overall, Ms. Parks states the data shows customer service has improved (CUPA Statement No. 8-R, pp. 2-7).

Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR A 0.00% ROE?

A. Yes. Based on the testimony of CUPA witnesses as referenced above, I am withdrawing my recommendation for a 0.00% ROE as a result of the Company not meeting its obligation to provide adequate and reasonable service to its customers.

<u>OVERALL RATE OF RETURN</u>

Q. HAS YOUR OVERALL RATE OF RETURN RECOMMENDATION CHANGED FROM YOUR DIRECT TESTIMONY?

A. Yes. While I am withdrawing my recommendation for a 0.00% ROE, I continue to support each recommendation made in I&E Statement No. 2 for a recommended 7.05% rate of return.

1 **Q. PLEASE RESTATE YOUR OVERALL RATE OF RETURN**

2 **RECOMMENDATION.**

3 A. I recommend the following rate of return for CUPA:

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.24%	4.41%
Total	100.00%		7.05%

4

5 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

6 A. Yes.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025206
Community Utilities of Pennsylvania Inc.	:	
Water Division	:	

VERIFICATION OF THE
BUREAU OF INVESTIGATION AND ENFORCEMENT

I, Christopher Keller, on behalf of the Bureau of Investigation and Enforcement, hereby verify that the documents preliminarily identified as I&E Statement No. 2, I&E Exhibit No. 2, and I&E Statement No. 2-SR were prepared by me or under my direct supervision and control. Furthermore, the facts contained therein are true and correct to the best of my knowledge, information and belief and I expect to be able to prove the same at an Evidentiary Hearing in this matter. This Verification is made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

/s/ Christopher Keller

_____
Christopher Keller
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Dated: September 8, 2021

I&E Statement No. 3-SR
Witness: Esyan A. Sakaya

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC –
WATER DIVISION

Docket No. R-2021-3025206

Surrebuttal Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:

Unaccounted-For Water
Rate Structure
Low-Income Program
Public Input Hearing
Scale Back of Rates

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INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Esyan A. Sakaya. My business address is 400 North Street, Harrisburg, Pennsylvania 17120.

Q. ARE YOU THE SAME ESYAN A. SAKAYA THAT PROVIDED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes. I submitted the Bureau of Investigation and Enforcement's ("I&E") Statement No. 3 and I&E Exhibit No. 3 on August 13, 2021.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to address the rebuttal testimony of Community Utilities of Pennsylvania, Inc. - Water (CUPA-W) witness J. Bryce Mendenhall (CUPA-W St. No. 1-R), witness Perry Brown (CUPA-W St. No. 2-R), witness David Clark (CUPA-W St. No. 3-R), witness Andrew Dickson (CUPA-W St. No. 4-R) and CUPA witness Emily Long (CUPA-W & WW St. No. 7-R). I will also address the rebuttal testimony of OCA witness Jerome D. Mierzwa (OCA St. No. 3R).

Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN EXHIBIT?

A. No. However, I will refer to my direct testimony and exhibit in this surrebuttal testimony.

Q. DID THE COMPANY AGREE WITH ANY OF THE RECOMMENDATIONS YOU MADE IN DIRECT TESTIMONY?

A. Yes. First, the Company agreed with my recommendation to reduce rate base by $20,646 (CUPA-W St. No. 2. p. 7 and CUPA-W St. No. 3-R, p. 3). Second, the Company also stated that it was willing to provide the requested updates comparing projected and actual plant additions in a timely manner (CUPA-W St. No. 3-R, p. 3). Third, the Company agreed to increase forfeited discount revenue to reflect the same percentage increase approved by the Commission (CUPA-W St. No. 2-R, p. 1). Lastly, all the remaining issues that I raised in my direct testimony are addressed below.

<u>UNACCOUNTED-FOR WATER</u>

Q. WHAT IS THE COMPANY'S OVERALL UNACCOUNTED-FOR WATER (UFW) LEVEL?

A. In my direct testimony, I determined the overall percentage of UFW during 2018, 2019, and 2020 averaged 22.38% (I&E Ex. No. 3, Sch. No. 1, p. 1, col. K, line 13). In summary, the Company has a combined three-year average of UFW that is above the Commission's policy statement, which states UFW should be kept

within reasonable amounts and that levels above 20% have been considered excessive by the Commission

Q. WHAT DID YOU RECOMMEND REGARDING ADJUSTMENTS TO THE COMPANY'S DETERMINATION OF UFW?

A. I recommended the Company's 20,255,050-gallon adjustment for main breaks/leaks and 6,064,222-gallon adjustment labeled as "adjustment" used to determine UFW were improper and should be removed. These amounts were shown on I&E Ex. No. 3, Sch. No. 1, p. 1, cols. F and H, line 13.

Q. WHY DID YOU RECOMMEND THESE ADJUSTMENTS TO THE COMPANY'S DETERMINATION OF UFW?

A. As described in my direct testimony, the determination of UFW should not include adjustments for main breaks/leaks or other "adjustments." The Commission allows utilities to have UFW up to 20% to account for main breaks, leaks, and unknown losses. Therefore, they should not be removed or "adjusted" from the UFW calculation (I&E St. No. 3, p. 11-14).

Q. WHAT DID YOU CALCULATE REGARDING CUPA'S UFW?

A. After I removed the Company's adjustments, I determined that the Company has 152,780,320 gallons, or 27.03%, of UFW (I&E Ex. No. 3, Sch. No. 1, line 14).

This level is 39,718,300 gallons in excess of the 20% UFW guideline (I&E Ex. 3, Sch. No. 1, p. 1, col. J, line 15).

Q. DID YOU RECOMMEND AN EXPENSE ADJUSTMENT TO REMOVE THE COST OF THIS EXCESS UFW?

A. Yes. I recommended a $30,751 adjustment to expenses to remove the cost of the 39,718,300 gallons of excess UFW. The $30,751 was determined by multiplying the $0.774 cost per gallon to purchase / produce 1,000 gallon of water times the 39,718,300 gallons of excess water (I&E Ex. No. 3, Sch. No. 1, p. 2, col. E, line 5).

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION THAT EXPENSES BE REDUCED BY $30,751 TO REMOVE THE COST OF EXCESS UFW?

A. Yes. The Company disagreed with my recommendation to reduce expenses by $30,751 to remove the cost of excess UFW for the following reasons. First, the Company believes that since the American Waterworks Association (AWWA) does not support a threshold, neither should the PUC. Second, the Company believes that the cost of detecting and repairing leaks should be considered. Third, the Company states that it's UFW should be evaluated consistent with the AWWA methodology that analyzes the steps the Company has taken to reduce UFW (CUPA-W St. No. 1-R, pp 1-6).

Q. DO YOU AGREE WITH THE COMPANY THAT SINCE THE AWWA DOES NOT ESTABLISH A THRESHOLD, NEITHER SHOULD THE PUC?

A. No. The Commission's policy regarding water conservation states that in rate proceedings of water utilities, the Commission examines specific factors regarding the action or failure to act to encourage cost-effective conservation by customers and reviews utilities' efforts to meet the criteria when determining just and reasonable rates (52 Pa. Code § 65.20. Water conservation measures—statement of policy. (pacodeandbulletin.gov)).

As such, evaluating UFW and recommending adjustments due to excess UFW is a valid component of determining appropriate rates, which is the purpose of base rate proceedings. The fact that AWWA does not have a similar UFW threshold in no way limits the Commission's ability to review and make adjustments for UFW above what it deems to be reasonable given that the Commission is required to determine just and reasonable rates for utilities under its jurisdiction.

Q. DO YOU AGREE WITH THE COMPANY THAT THE COST OF DETECTING AND REPAIRING THE SYSTEM SHOULD BE A CONSIDERATION IN DETERMINING A REASONABLE LEVEL OF UFW?

A. No. The Company has failed to show that any remediation project that could

detect and reduce UFW is not cost effective. The Company did not describe any circumstances that exist in its system such as environmental features that would be cost prohibitive to remediate that would justify not being able to reduce UFW. Water is typically lost through mains, services, and improper metering. This Company position contradicts the Commission policy statement that describes steps to conserve water. The Company has failed to show how investing in mains, services, and/or improving metering will not reduce UFW. Further, regardless of whether it is less costly to lose treated water than it is to perform leak detection, water conservation and just and reasonable rates are better served through repair of leaks and elimination of UFW.

Q. DO YOU AGREE WITH THE COMPANY THAT THE EVALUATION OF UFW SHOULD BE CONSISTENT WITH THE AWWA THAT ANALYZES THE STEPS TAKEN TO REDUCE UFW?

A. No. The Commission has 20% UFW benchmark as a factor to encourage conservation and to determine if the Company is providing just and reasonable rates. I disagree with the Company's position in CUPA-W Statement Number 1-R, p. 3, where the Company believes implementing the AWWA recommended practice of not using the Volumetric Percentage Performance Indicator (VPPI) as a

means of calculating UFW as the PA PUC does, but instead use the alternative stated below:

> Thresholds for compliance should be based on well-founded rationales that yield actionable information and recognize benefit-cost analysis to evaluate alternative activities for achieving compliance, such as those described in this manual. Such rationales are preferred over arbitrary, less meaningful parameters like universal or percentage-based triggers. The method of calculation for the applicable parameters should be clearly stated.

Q. WHY DO YOU DISAGREE WITH IMPLEMENTATION OF THE AWWA PRACTICE OF ADDRESSING EXCESS UFW?

A. As stated above, the AWWA is not a regulatory body that determines just and reasonable rates for regulated water utilities in Pennsylvania. The Commission's basis for a volumetric limitation on UFW includes the issue of water conservation, which is clearly neglected in the AWWA's cost-benefit analysis methodology.

Q. DO YOU CONTINUE TO RECOMMEND $30,751 BE EXCLUDED FROM EXPENSES AS A RESULT OF EXCESS UFW?

A. Yes. The $30,751 expense adjustment that I recommended was to remove the cost of 39,718,300 gallons of excess UFW. This recommendation is consistent with the Commission's water conservation policy statement and is proper to set just and reasonable rates.

RATE STRUCTURE - PRESENT AND PROPOSED RATES

Q. DID THE COMPANY PROPOSE TO REVISE ITS RATES TO CORRECT THE INCREASE IN REVENUE BY CLASS IN ITS DIRECT TESTIMONY?

A. Yes. For all 5/8th inch customers, the Company is proposing a $24.84 per month customer charge and a usage rate of $11.93 per thousand gallons for residential customers and a usage rate of $10.99 per thousand gallons for commercial customers. For low-income residential customers, the Company is proposing a usage rate of $4.13 per thousand gallons (I&E Ex. No. 3, Sch. 2, p. 1, col. E, lines 23-27). For customer with meters larger than 5/8th inch, the Company applies a higher monthly charge and the same corresponding usage rates. For availability customers, the Company is proposing a flat rate of $15.32 per month. For public fire service, the Company applies a flat rate of $118.93 per month. I summarized these revised rates on I&E Ex. No. 3, Sch. 2, p. 1, col. E, lines 14-16. These revised rates produce an increase of $757,495 and $2,823,024 in total revenue. The $757,495 is an increase of 36.7% ($757,495 / $2,065,539) (CUPA-W St. No. 3, Summary p. 1-9).

Q. DID YOU AGREE WITH ALL OF THE REVISED RATES PROPOSED BY THE COMPANY?

A. No. As described below, the proposed Public Fire Service, 6-inch customer charge, and availability charges proposed by the Company are too high. I also

recommended that the proposed low-income usage rate should not be implemented, which is discussed separately herein.

Q. WHAT IS GRADUALISM AND WHY SHOULD THE CONCEPT OF GRADUALISM BE FOLLOWED?

A. Gradualism refers to slowly increasing a rate over time rather than all at once. The concept of gradualism should be followed so that specific customers do not receive a sudden large increase in their bill compared to other customers. This allows customers to slowly become accustomed to paying a higher rate over time.

Q. DID YOU INITIALLY CLAIM THAT THE COMPANY DID NOT FILE A COST OF SERVICE STUDY?

A. Yes. On pages 18-20 of I&E Statement No. 3, I stated that the Company did not file a COSS. To clarify this statement, the Company did provide a functional COSS that separated the cost of the operating the system into the maximum hour, maximum day, customer cost and direct fire functions. However, as shown on CUPA Exhibit CUPA-W Ex. SAM-1, the Company did not include a class COSS showing the rate of return and relative rate of return by class to establish the appropriate revenue for the various classes other than Public Fire.

Q. WHAT IS THE PRESENT PUBLIC FIRE RATE?

A. The present Public Fire service rate is $32.18 per month (I&E Ex No. 3, Sch. 2, p. 1, line 14).

Q. WHAT PUBLIC FIRE RATE DID THE COMPANY ORIGINALLY PROPOSE?

A. The Company originally proposed to increase the Public Fire rate of $32.18 per month to $118.73 per month. This equated to an increase of $86.55 per month over the present rate of $32.18 per month or 269.0% ($86.55/ $32.18) (I&E Ex. No. 3, Sch. No. 2, p. 1, line 14).

Q. WITH THE CONCEPT OF GRADUALISM IN MIND, WHAT PUBLIC FIRE SERVICE RATE DID YOU RECOMMEND?

A. I recommended a Public Fire service rate of $44.00 per month in Direct Testimony. This equated to an increase of $11.82 per month over present rates of $32.18 per month or 36.7% ($11.82 / $32.18) over the Company's present rate of $32.18 per month (I&E Ex. No. 3, Sch. No. 2, p. 1, col. I, line 14).

Q. WHY DID YOU RECOMMEND LIMITING THE INCREASE TO PUBLIC FIRE SERVICE TO APPROXIMATELY 36.7%?

A. I believed that the Company's proposed 269.0% increase is too much of an increase in one case (I&E Ex. No. 3, Sch. No. 2, p. 1, col. F, line 14). Therefore, I

recommended an increase of 36.7%, which is the same as the system average increase proposed by the Company (I&E Ex. No. 3, Sch. No. 2, p. 1, col. J, line 14).

Q. DID THE COMPANY REVISE ITS PROPOSED PUBLIC FIRE SERVICE RATE?

A. Yes. In rebuttal testimony, the Company reduced the Public Fire rate to $59.37 per month. This proposal increases the Public Fire rate from $32.18 per month to $59.37 per month, which is an increase of $27.19 per month or 84.5% ($27.19 /$32.18). The Company states that the $59.37 is 25% of the full cost of service it incurs to provide public fire service (CUPA St. No. 4-R, p. 13).

Q. DO YOU BELIEVE THAT AN INCREASE TO THE PUBLIC FIRE SERVICE RATE OF 84.5% IS EXCESSIVE?

A. Yes. As described above, gradualism should be a concern when increasing rates, and I believe an 84.5% increase is excessive.

Q. DID THE COMPANY ADDRESS YOUR CONCERN REGARDING RATE SHOCK?

A. No. The Company failed to address why increasing the public fire service rate 84.5% to $59.37 per month does not constitute rate shock.

Q. DO YOU WISH TO REVISE YOUR RECOMMENDATION TO ESTABLISH A PUBLIC FIRE SERVICE OF $44.00 PER MONTH?

A. No. I continue to believe that a Public Fire rate increase of 36.7% is reasonable (I&E St. No. 3, p. 18).

Q. DID THE OCA ADDRESS YOUR RECOMMENDATION TO ESTABLISH A PUBLIC FIRE SERVICE OF $44.00 PER MONTH?

A. Yes. The OCA believes the Public Fire service rate should be increased from $32.18 per month to $49.91 per month which is an increase of $17.73 ($49.91 - $32.18) per month. The $17.73 per month equates to an increase of 55.1% ($17.73 / $32.18). The 55.1% increase is based upon 1.5 times the system average of 36.7% (0.367 X 1.5 = 0.551) (OCA St. 3-R, p. 2).

Q. DID YOU AGREE WITH THE OCA'S PUBLIC FIRE SERVICE RATE?

A. No. I believe an increase of 55.1% also violates the concept of gradualism, given the system average increase is already proposed to be 36.7%, which is a large increase itself.

Q. WHAT IS THE PRESENT SIX-INCH METER CUSTOMER CHARGE?

A. The present six-inch customer charge is $121.25 per month (I&E Ex No. 3, Sch. 2, p. 1, line 12).

Q. WHAT SIX-INCH METER CUSTOMER CHARGE DID THE COMPANY ORIGINALLY PROPOSE?

A. The Company originally proposed to increase this customer charge to $873.09 per month. This equated to an increase of $751.84 per month over the present rate of $121.25 per month or 620.1% ($751.84 / $121.25) (I&E Ex. No. 3, Sch. No. 2, p. 1, line 12).

Q. WHAT SIX-INCH CUSTOMER CHARGE DID YOU RECOMMEND?

A. I recommended a six-inch customer charge of $166.00 per month (I&E Ex. No. 3, Sch. No. 2, p. 1, col. I, line 12). This equates to an increase of $44.75 per month or 36.9% ($44.75 / $121.25). This 36.9% increase is the approximate system average increase being proposed by the Company (I&E Ex. No. 3, Sch. No. 2, p. 1, col. I and J, line 12).

Q. WHY DID YOU RECOMMEND LIMITING THE INCREASE TO THE SIX-INCH CUSTOMER CHARGE TO APPROXIMATELY 36.9%?

A. As described above, the Company is proposing to increase the six-inch customer charge 620.1%. This 620.1% increase violates the concept of gradualism describe above. To moderate this increase, I recommended that the six-inch customer charge be increased 36.9% so that this customer receives an increase closer to the system average increase (I&E Ex. No. 3, Sch. No. 2, p. 1, col. J, line 12).

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO ESTABLISH A SIX-INCH CUSTOMER CHARGE OF $166.00 PER MONTH?

A. Yes. The Company disagreed with my recommendation to establish a six-inch customer charge of $166.00 per month. First, the Company revised the proposed six-inch customer charge to $923.94 per month, an even larger increase. Second, the Company states that it provided a class COSS that supports the $923.94 per month. Third, the Company believes that the I&E recommendation will cause other customers to subsidize this large customer and that a gradual increase will only increase the subsidy to this large customer. Finally, the Company states that even though this customer currently uses no water, they could put demands on the system in the future (CUPA-W St. No. 4-R, pp. 12-16).

Q. PLEASE COMMENT ON THE COMPANY'S PROPOSAL TO ESTABLISH A LARGER INCREASE TO THE SIX-INCH CUSTOMER CHARGE IN REBUTTAL TESTIMONY?

A. The Company proposal to increase the six-inch customer charge form $121.25 month to $923.24 per month equates to an increase of $801.99 per month or 661.4% ($801.99 / $121.25) (CUPA-W, St. 4-R. pp. 14-15). As described in my direct testimony, the smaller increase of 620.1% was unreasonable; therefore, a larger increase of 661.4% is also unreasonable.

Q. DID THE COMPANY FILE A CLASS COST OF SERVICE STUDY AS STATED IN CUPA-W STATEMENT NO. 4, PAGE 15?

A. No. The Company's COSS allocated and assigned costs to functions, not classes. This is evident by the lack of a comparison of the class revenue under present and proposed rates.

Q. DOES THE COMPANY'S FUNCTIONAL COSS SHOWING THE $923.24 PER MONTH COST OF PROVIDING SERVICE TO A SIX-INCH CUSTOMER SUPPORT INCREASING THE SIX-INCH CUSTOMER CHARGE IN ONE STEP?

A. No. First, a functional cost of service study is just a guide, and not the final determination of rates. Second even though the functional COSS supports for a higher six-inch customer charge, increasing the six-inch rate by $801.99 per month in one step is not reasonable. As described above, this 661.4% increase violates the concept of gradualism.

Q. SHOULD THE COMMISSION BE CONCERNED THAT THIS CUSTOMER COULD PUT DEMANDS ON THE SYSTEM IN THE FUTURE?

A. No. Over time, the six-inch meter charge will increase and eventually reflect a more reasonable recovery of the appropriate costs allocated to a six-inch customer.

As described above, in this case the largest concern is rate shock, which would certainly occur if the Company's 661.4% increase is approved.

Q. WHAT INCREASE DID THE COMPANY PROPOSE FOR THE AVAILABILITY CHARGE?

A. The Company proposed to convert the current rate of approximately $19.00 per quarter to $15.32 per month. Converting the current $19.00 per quarterly rate to an effective monthly rate results in a rate of $6.33 ($19.00 / 3) per month. The Company's proposed availability charge of $15.32 per month equates to an increase of $8.99 per month or approximately 142% ($15.32 - $6.33)/$6.33).

Q. WHAT AVAILABILITY CHARGE DID YOU RECOMMEND?

A. I recommended an availably charge of $8.70 per month. This equates to an increase of $2.37 per month or 37.4% ($2.37 / $6.33) (I&E Ex. No. 3, Sch. 2, p. 1, lines 14-15). This 37.4% is comparable to the system average increase of 36.7% described above.

Q. WHY DID YOU RECOMMEND LIMITING THE INCREASE TO THE AVAILABILITY CHARGE TO $8.70 PER MONTH?

A. As described in my direct testimony and above, the Company did not provide a proper class cost of service study that would support a higher availability charge. Therefore, increasing the availably charge the same percentage as the total system

is reasonable. I also believe the 142% ($8.98 /$6.33) increase proposed by the Company is too large for one case and violates the concept of gradualism described above.

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO LIMIT THE AVAILABILITY CHARGE TO $8.70 PER MONTH?

A. Yes. The Company disagrees with my recommendation to establish an availability charge of $8.70 per month because the Company believes that the availability charge is supported by its functional COSS (CUPA St. No. 4-R, pp. 19-20).

Q. IS THE COMPANY'S AVAILABILITY CHARGE SUPPORTED BY ITS FUNCTIONAL COST OF SERVICE STUDY?

A. No. To support this claim in rebuttal testimony, the Company provided CUPA Exhibit AWD 1-R which shows availability customers with a meter equivalent of 0.45. This 0.45 and the corresponding rates were determined by using the bill of an average usage customer (CUPA-W St. No. 6-R, p. 16).

Q. IS IT PROPER TO BASE THE AVAILABILITY CHARGE ON A METER EQUIVALENT BASIS OR AN AVERAGE CUSTOMER'S USAGE?

A. No. Since availability customers do not have meters or use water, the proper way to determine an availability charge would be to allocate a portion of mains and production plant to availability customers. This is the plant currently in place and

ready to service availability customers. Since the Company failed to do a proper analysis, the Company's availability charge of $15.32 per month is not supported.

Q. DID THE OCA ADDRESS YOUR RECOMMENDATION TO ESTABLISH AN AVAILABILITY CHARGE OF $8.70 PER MONTH?

A. Yes. The OCA believes that the availability charge in the Consolidated system should be decreased. Therefore, the OCA believes there should be two different availability charges (OCA St. 1-R, pp. 3-4).

Q. IS THE OCA CORRECT THAT YOU ARE PROPOSING TO LOWER THE TAMIMENT AVAILABILITY CHARGE?

A. No. The Company revised its proof of revenue in testimony (CUPA-W St. No. 3, Supplement No. 9 to Tariff Water-Pa). In that testimony, the Company revised the present quarterly availability charge to $18.81 per quarter, or $6.06 ($18.81 / 3) per month. Therefore, my proposed availability charge of $8.70 per month is an increase of $2.64 ($8.70 - $6.06) per month.

Q. WHAT WAS THE TOTAL IMPACT OF YOUR RATE RECOMMENDATIONS?

A. Lowering the Public Fire service rate reduced proposed revenue by $55,599 and lowering the six-inch customer charge reduced proposed revenue by $16,970. Eliminating the low-income usage rate of $4.13 per thousand gallons increased

proposed revenue by $137,720. Lowering the availability charge reduced revenue by $29,644. Taken together my rate changes resulted in approximately $35,487 of additional revenue (I&E Ex. No. 3, Sch. 2. p. 3, lines 23-27).

Q. WHAT DID YOU RECOMMEND TO ELIMINATE THE $35,487 OF ADDITIONAL REVENUE AS A RESULT OF YOU RATE CHANGES?

A. I recommended that the proposed monthly 5/8th inch residential and commercial monthly charge be lowered from $24.84 to $23.94 per month. This $0.90 reduction will reduce revenue by $35,487 (I&E Ex. No. 3, Sch. 2. p. 3, line 28).

Q. WHAT IS THE TOTAL IMPACT OF ALL YOUR RATE CHANGES ABOVE?

A. The net impact of all the rate changes above is approximately zero. The result is a revenue increase of $757,496 (I&E Ex. No. 3, Sch. 2. p. 2, col. I, line 15).

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO REDUCE THE MONTHLY CUSTOMER CHARGE TO MAKE THE INCREASE REVENUE NEUTRAL?

A. Yes. The Company believes that since none of my recommendations should be approved, there is no reason to accept my recommendation to lower the proposed monthly customer charge. The Company proposes that if the Commission approves any of my recommendations that increase revenue, the additional

revenue should be used to reduce the proposed usage rates (CUPA-W St. No. 4-R, pp. 19-20).

Q. DO YOU AGREE WITH THE COMPANY THAT ANY CHANGE IN REVENUE AS A RESULT OF MY RECOMMENDATIONS BE APPLIED TO THE USAGE RATES?

A. No. The Company failed to explain why the additional revenue should not be applied to the monthly customer charges. After my recommended decrease to the customer charge, the 5/8 inch residential and commercial customer charge will still increase by 38.8%, which is more than the system average increase and more than the 28.5% increase in the usage rate. Based on these disparate increases between the customer charge and the usage rate, application of the excess revenue to reducing the 5/8 inch residential and commercial customer charge is appropriate. Therefore, I continue to recommend that any necessary revenue adjustments be applied to the customer charge (I&E Ex. No. 3, Sch. 2, p. 1, column J).

<u>LOW-INCOME PROGRAM</u>

Q. WHAT LOW-INCOME USAGE RATE DID THE COMPANY PROPOSE?

A. The Company proposed a low-income usage rate of $4.13 per thousand gallons. This $4.13 per thousand gallons is 34.6% ($4.13 / $11.93) of the proposed residential usage rate of $11.93 per thousand gallons.

Q. DID YOU AGREE WITH THE COMPANY'S PROPOSAL TO IMPLEMENT A LOW-INCOME USAGE RATE?

A. No. I recommended the Company not implement a low-income usage rate of $4.13 per thousand gallons, which is a discount of $7.80 off the proposed usage rate of $11.93 per thousand gallons (I&E St. No. 3, p. 21).

Q. WHY DID YOU RECOMMEND THAT THE LOW-INCOME USAGE RATE BE REJECTED.

A. A low-income usage rates results in a revenue shortfall that must be recovered from other customers. Therefore, rates for other customers (either the usage rate of $11.93 per thousand gallons or the monthly customer charge) are higher to make up for the lower revenue received from low-income customers.

Q. DID YOU PROVIDE OTHER REASONS WHY THE LOW-INCOME RATE AS PROPOSED SHOULD BE REJECTED?

A. Yes. In direct testimony I also expressed a concern that the proposed discount of 65.4% per thousand gallons is simply too large. CUPA is proposing that low-income customers pay a usage rate of $4.13 per thousand gallons in lieu of the full usage rate of $11.93 per thousand gallons, which is a discount of $7.80 per thousand gallons ($11.93 - $4.126). Under this proposal, a customer that uses 3,000 gallons per month would pay $12.39 ($4.13 x 3) for their usage while a customer paying the full usage rate would be charged $35.79 ($11.93 x 3). This

discount of $23.40 per month is too large, especially when compared to low-income rates offered by other utilities. For example, PAWC's current low-income program offers customers a 15% customer charge discount. This equates to a discount of approximately $2.55 ($17.00 x 0.15) per month (I&E Ex. No. 3, Sch. 3). As a result, CUPA's $23.40 discount in my example is over nine times the discount PAWC offers its low-income water customers ($23.40 / $2.55 = 9.17).

Q. DO YOU WISH TO CORRECT YOUR COMPARISON OF THE CUPA AND PAWC LOW-INCOME RATES?

A. Yes. In my direct testimony, I inadvertently excluded PAWC's 10% usage rate discount offered to low-income customers. Therefore, I wish to correct my comparison to say that an average PAWC customers receives a $2.55 customer charge discount (I&E St. No. 3, p. 21) plus a 10% usage rate discount. PAWC's usage rate is $11.2991 per thousand gallons; therefore, assuming a customer uses 3,000 gallons per month, this 10% discounts saves customers $3.39 (1.12991 X 3) per month. This results in a total savings to PAWC low-income customers of $5.94 ($2.55+$3.39) per month.

Q. DOES THIS CORRECTION CHANGE YOUR RECOMMENDATION THAT THE LOW-INCOME USAGE RATE SHOULD NOT BE APPROVED?

A. No. As described above, the CUPA proposal is a discount of $23.40 per month,

much more than the $5.94 per month current PAWC discount.

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO REJECT THE LOW-INCOME USAGE RATE?

A. Yes. The Company disagrees with my recommendation to reject the low-income usage rate. First, CUPA appears to agree with I&E regarding how regular residential customers will subsidize low-income customers. Second, the Company believes that its proposal only increases the average residential bill by $3.28 per bill and since this $3.28 per bill does not make the CUPA bill unaffordable, it should be approved. Finally, the Company states that it is not familiar with PAWC's low-income program and the specific details of the PAWC program should not prohibit CUPA from implementing its own program (CUPA-W St. No. 4-R, p. 18).

Q. SHOULD THE COMMISSION ACCEPTS THE COMPANY'S STATEMENT THAT THE IMPACT TO RESIDENTIAL CUSTOMERS IS MINIMAL?

A. No. First, the revenue shortfall as a result of the low-income rate is being picked up by residential customers. Second, any additional increase to other customers, no matter how small, should be considered in the context of the entire proceeding and the overall rate impacts. Because the Company's low-income program causes other customer's usage rates to be higher, the Commission should consider this

higher cost and consider the public input testimony where customers testified as to the hardship this increase will cause and not give weight to the Company's contention that the extra $3.28 on the average residential bill is affordable. In the context of this proceeding and the already large requested increases applied to the residential customer class, it should not be approved.

Q. DOES THE COMPANY'S ALLEGATION THAT THE IMPACT OF THE LOW-INCOME PROGRAM ON RESIDENTIAL BILLS IS AFFORDABLE ALTER YOUR POSITION?

A. No. The Company fails to recognize that if the low-income usage rate is not approved, the rates for an average residential customer are more affordable, and the customers have already expressed concerns about affordability with the proposed increase. The Company has even acknowledged a large part of the public input testimony concerns the high increase for both water and wastewater customers (CUPA-W & WW St. No. 7, p. 27). This low-income usage rate adds to the high increase the average water customer will receive.

Q. HAS THE COMPANY CONTRADICTED ITSELF WITH ITS POSITION THAT COSTS PASSED TO OTHER RESIDENTIAL CUSTOMERS FOR ITS LOW-INCOME PROPOSAL IS ACCEPTABLE?

A. Yes. As shown on I&E Ex. No. 3, Sch. 2, p. 3, line 27, the revenue shortfall associated with the Company's low-income proposal is approximately $137,720,

while the subsidy to the six-inch customer is approximately $18,174 (24 bills X ($923.24 - $166.00). The Company believes that gradualism should not apply to the six-inch customer due to the unfair subsidization by other customers, but it implies subsidizing the low-income program is affordable. The Company cannot have it both ways, proposing low-income rates that reduce revenue by $137,720 and, at the same time, objecting to limiting the **increase** to one customer that results in a revenue shortfall as determined by its functional COSS of only $18,174.

Q. DOES THE COMPANY'S LACK OF FAMILIARITY OF PAWC'S PROGRAM SUPPORT ESTABLISHING A LOW-INCOME USAGE RATE PROGRAM?

A. No. Comparing the Company's large low-income program credit to the much smaller PAWC low-income program credit where the program is long-established indicates that the Company's low-income usage program is both too large and insufficiently supported.

Further, the Company utilized generic locality data to establish a percentage of participants and corresponding revenue shortfall through its low-income rate, but it did not survey its customer base to assess how many residents possibly fall into the federal poverty level guideline for 2021 that indicate a poverty level income of $12,880 per year for an individual and $21,960 per year for a family of three (https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-

guidelines/prior-hhs-poverty-guidelines-federal-register-references/2021-poverty-guidelines).

From realtor.com, I found the following description of local property values for areas in the Company's service territory:

"Homes for sale in Penn Estates, East Stroudsburg, PA have a median listing price of $250,000. There are 993 active homes for sale in Penn Estates, East Stroudsburg, PA, which spend an average of 62 days on the market (https://www.realtor.com/realestateandhomes-search/East-Stroudsburg_PA/Penn-Ests)."

"Homes for sale in Tamiment, PA have a median listing price of $248,900. There are 46 active homes for sale in Tamiment, PA, which spend an average of 77 days on the market (https://www.realtor.com/realestateandhomes-search/Tamiment_PA)."

Considering that local property values in Penn Estates and Tamiment area as defined by realtor.com far exceed the values of properties that could be owned by persons within the 2021 federal poverty guidelines, it is unreasonable to institute a low-income program at the level recommended by the Company without specific research and survey of its own customer base. The projected levels of revenue shortfalls generated by the Company's generic analysis will cause harm to customers through the setting of the higher base rates necessary to subsidize this program. Finally, since the revenue shortfall is built into base rates with no reconciliation of actual participation costs to those projected in this base

rate case, the potential excess revenue generated by low participation in the program merely provides excess revenues to the Company through the establishment of unreasonable and unsupported base rates.

Q. DID THE OCA ADDRESS THE STATEMENTS CONCERNING THE YOUR RECOMMENDATION NOT TO ESTABLISH A LOW-INCOME USAGE RATE?

A. Yes. First, the OCA states that bill impact is important to all customers. Then the OCA recommends the establishment of a low-income usage rate that will mitigate the increase to a select group of customers. Finally, the OCA proposes the program be approved as a pilot program (OCA St. 1-R, p. 4).

Q. DOES OCA'S RECOMMENDATION TO APPROVE THIS AS A PILOT PROGRAM ADDRESS YOUR CONCERNS AND WARRANT APPROVAL OF THE LOW-INCOME PROGRAM?

A. No. Rates must be just and reasonable for all customers at the conclusion of this proceeding. Designating the proposed low-income program as a pilot program does not change the fact that other customers usage rates will be just as high until the pilot program ends. Therefore, the OCA proposal to establish the low-income rate as a pilot program does not mitigate this concern since the revenue shortfall will be the same if it is permanent or just a pilot program.

Q. DOES THE COMPANY'S OR THE OCA'S REBUTTAL TESTIMONY CHANGE YOUR RECOMMENDATION NOT TO ESTABLISH A LOW-INCOME USAGE RATE?

A. No. I continue to believe that the low-income usage rate should not be approved.

<u>PUBLIC INPUT HEARINGS</u>

Q. WHAT DID YOU RECOMMEND BASED UPON THE CUSTOMER TESTIMONY PROVIDED AT THE PUBLIC INPUT HEARING?

A. I recommended that CUPA track and report customer complaints, service interruptions, main breaks, boil water advisories, and provide the Company's response to each event. I recommend that the report be filed one year after the order is entered in this proceeding and each year for the next 3 years thereafter (I&E St. No. 3, p. 25).

Q. WHY DID YOU RECOMMEND THE COMPANY TRACK AND REPORT CUSTOMER COMPLAINTS AND SERVICE ISSUES?

A. The Company is required to provide adequate, safe, and reasonable water service. The issues raised at the public input hearing call into question whether the Company is adhering to this mandate. Reporting its findings with respect to customer complaints and service issues will inform the Commission and interested

parties about the status of these issues with the goal of improving service in its territory.

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATIONS CONCERNING THE PUBLIC INPUT TESTIMONY?

A. Yes. The Company states that it addressed the majority of the public input comments except for customers that purchase bottled water. The Company went on to state that it notifies customers in a timely basis of service issues, and if they do not receive the notification, the customer should notify the Company of the best method to notify them (CUPA-W &WW, St. No. 7-R, pp. 26-27).

Q. DOES THE COMPANY'S REBUTTAL TESTIMONY ADDRESS ALL OF YOUR CONCERNS EXPRESSED ABOUT THE PUBLIC INPUT TESTIMONY?

A. The Company did respond in detail to the issues raised at the public input hearing; however, given the volume of customer input provided at that hearing, I continue to recommend the Company report its findings with respect to customer complaints and service issues to inform the Commission and interested parties about the status of these issues with the goal of improving service in its territory as described in I&E St. No. 3, p. 25.

1 **SCALE BACK OF RATES**

2 **Q. DID YOU RECOMMEND A SCALE BACK IF THE COMMISSION**
3 **GRANTS LESS THAN THE FULL INCREASE REQUESTED BY THE**
4 **COMPANY?**

5 A. Yes. I recommended that if the Commission grants less than the full requested
6 amount that the customer charges and usage rates that were increased be reduced
7 proportionally to the percentage increase shown on I&E Exhibit No. 3, Sch. 2, p.
8 1, col. J. This includes the consolidated customer charges on lines 1-5, and lines
9 11-12, and 18-21. The six-inch customer charge, Public Fire rate, and availability
10 charge should be reduced so that the percentage increase for these rates is the same
11 as the system average increase. The corresponding Tamiment rates should match
12 the rates in the Consolidated system as part of the scale back.

13

14 **Q. WHY DID YOU RECOMMEND A PROPORTIONAL SCALE BACK?**

15 A. The Company did not provide a class COSS to analyze the revenue received and
16 expenses incurred to provide service to each class with corresponding rate or
17 return and relative rate of return therefore, a proportional scale back is the most
18 reasonable approach to establish rates if the Commission grants less than the full
19 increase.

Q. DID THE COMPANY REVISE THE REQUESTED INCREASE IN REBUTTAL TESTIMONY?

A. Yes. The Company revised its requested increase down to $753,939 (CUPA-W, St. No. 3-R, p. 1).

Q. DOES THIS CHANGE CAUSE YOU TO CHANGE YOUR SCALE BACK RECOMMENDATION?

A. No. The small decrease of $3,578 ($757,517 - $753,939) from the original request does not cause me to change my scale back recommendation.

Q. DID THE COMPANY ADDRESS YOUR PROPORTIONAL SCALE BACK?

A. No. Therefore, rates should be scaled back so that the rates are consolidated as described in I&E St. No. 3, p. 26.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

CUPA W&WW STATEMENT NO. 2-RJ

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REJOINDER TESTIMONY

OF

PERRY BROWN

WATER & WASTEWATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Rebuttal Testimony of Perry Brown (Water and Wastewater)

INTRODUCTION AND QUALIFICATIONS

Q: **ARE YOU THE SAME PERRY BROWN WHO PROVIDED THE REBUTTAL STATEMENT CUPA STATEMENT 2-R?**

A: Yes.

Q: **OCA WITNESS SHERWOOD REQUESTED CUPA UPDATE ITS RATE CASE EXPENSE. COULD YOU PLEASE PROVIDE AN UPDATE?**

A: Yes. Legal services and consulting services billed as of September 6, 2021 amount to $181,414.46. For ongoing settlement negotiations, briefs, exceptions, and compliance we estimate an additional legal $50,000 in costs and $15,390 in consulting costs. Other professional services billed as of September 6, 2021 amount to 246,774. See also **CUPA Exhibit PB-1RJ.**

Q: **HOW DO THESE UPDATED COSTS IMPACT THE REVENUE REQUIREMENT FOR WATER AND WASTEWATER?**

A: For water, this brings the revenue requirement to $752,106 and for wastewater 992,203.

Q: **DOES THIS CONCLUDE YOUR PREPARED REJOINDER TESTIMONY?**

A: Yes.

Baker Tilly Municipal Advisors, LLC
8365 Keystone Crossing Suite 300
Indianapolis, IN 46240 • (317) 465-1500

Mr. Perry Brown, Financial Planning and Analysis Manager
Corix Group of Companies
Mid-Atlantic Operations
500 W Monroe St, Ste 3600
Chicago, IL 60661-3779

perry.brown@uiwater.com

Invoice Date:	September 6, 2021
Invoice Number:	BTMA11071
Client Number:	157442

INVOICE	**AMOUNT**
Fees	
For professional services rendered in connection with the Company's rate case currently pending before the Pennsylvania Public Utility Commission. The fees payable reflect time and expense incurred through September 5, 2021 and are billed pursuant to the engagement letter dated December 21, 2020.	
Cost of Service Study and Direct Testimony	$18,000.00
Discovery, Other Party Review, Rebuttal, Rejoinder, Hearing Prep	$9,955.00
Fees Total:	$27,955.00
Expenses Total:	$0.00
Invoice Total:	**$27,955.00**

For questions, comments or suggestions, please contact Scott Miller at (317) 465-1500.

Balance is payable upon receipt or previously agreed upon terms.

Please ACH or wire payment to:	**Or send payment to:**	**Reference:**
US Bank, Milwaukee, WI Routing No: 075000022 Account No: 182380578936 Reference #: BTMA11071	Baker Tilly Municipal Advisors, LLC PO Box 957915 St. Louis, MO 63195-7915	Client Number: 157442 Invoice Number: BTMA11071 Amount Enclosed: $_____

Project Name: 2021 COS (CUPA)
Date: September 6, 2021
Invoice # BTMA11071

Date	Staff Name	Description	Hours
12/15/20	Hadler, Scott	Kickoff meeting	0.75
12/15/20	Holliday, Courtney	Kickstart meeting, reviewing previous report and data requests	0.75
12/15/20	Miller, Scott	Kickoff meeting with staff	0.50
12/16/20	Holliday, Courtney	Proofing and sending data request for review	0.25
12/21/20	Miller, Scott	Finalize and send agreement	0.50
01/13/21	Hadler, Scott	Data request	1.00
03/05/21	Miller, Scott	Working group emails	0.25
03/10/21	Hadler, Scott	Discuss rate design	1.00
03/10/21	Hadler, Scott	Consumer study	0.75
03/10/21	Holliday, Courtney	Working group meeting, planning next steps and timeline, reviewing prior year report and cost of service database	1.50
03/10/21	Miller, Scott	Working group meeting and related prep and follow up re status of case	1.00
03/11/21	Hadler, Scott	Consumer study	3.00
03/11/21	Holliday, Courtney	Questions regarding cost of service database and information received	0.50
03/12/21	Hadler, Scott	Consumer study	0.50
03/12/21	Holliday, Courtney	Working on sewer database and report schedules	4.75
03/12/21	Miller, Scott	Discuss status and next steps with S. Hadler	0.25
03/15/21	Hadler, Scott	Consumer study	0.50
03/16/21	Holliday, Courtney	Updates to report and determining next steps	1.75
03/17/21	Hadler, Scott	Discuss outstanding items	0.25
03/17/21	Holliday, Courtney	status update internal meeting	0.25
03/17/21	Miller, Scott	Status update with staff	0.25
03/18/21	Holliday, Courtney	Preparing portion of schedules and sending to Scott for review, updating water pivot tables to tie out consumer study	1.50
03/19/21	Hadler, Scott	Cost of service studies	3.50
03/19/21	Holliday, Courtney	Updates to databases and report schedules	1.50
03/19/21	Miller, Scott	Review equivalent bill schedules and send to working group	0.50
03/22/21	Holliday, Courtney	Updating COS with preliminary pro forma numbers	1.50
03/23/21	Hadler, Scott	Cost of service study	2.00
03/25/21	Miller, Scott	Working group emails	0.25
03/26/21	Hadler, Scott	Review pro forma information	1.00
03/26/21	Holliday, Courtney	Updating COS report for new pro forma numbers received and adding Tamiment flow rate	2.25
03/29/21	Miller, Scott	Status updates	0.25
03/31/21	Holliday, Courtney	Looking into data received and updating pro forma report	1.00
04/01/21	Hadler, Scott	Cost of service study	1.25
04/01/21	Holliday, Courtney	Discussing questions with Scott	0.50
04/02/21	Holliday, Courtney	working on report	1.25
04/05/21	Holliday, Courtney	Updating sewer rate report and proofing	3.00
04/06/21	Holliday, Courtney	Working on water cost of service	3.50
04/06/21	Miller, Scott	Review Sewer COS	1.25
04/07/21	Hadler, Scott	Cost of service study	3.25

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Project Name: 2021 COS (CUPA)
Date: September 6, 2021
Invoice # BTMA11071

bakertilly

Date	Staff Name	Description	Hours
04/07/21	Holliday, Courtney	Discussion with Scott and Scott regarding sewer report, updating sewer and water reports	4.50
04/07/21	Miller, Scott	Review Sewer COS	2.00
04/08/21	Hadler, Scott	Cost of service study	3.00
04/08/21	Holliday, Courtney	Updating sewer report for Scott's comments, updating water report for Scott's comments, sending questions to utility	2.75
04/08/21	Miller, Scott	Review Water COS	1.50
04/09/21	Hadler, Scott	Cost of service study	1.00
04/09/21	Holliday, Courtney	Updates to both cost of service studies due to changes in pro forma numbers	1.50
04/09/21	Miller, Scott	Review and finalize draft COS reports	2.50
04/12/21	Holliday, Courtney	Updating reports	1.25
04/12/21	Miller, Scott	Review case status, working group emails and finalize reports	0.75
04/12/21	Miller, Scott	Phone with P. Brown	0.25
04/13/21	Miller, Scott	Review status of case	0.25
05/24/21	Miller, Scott	Working group emails re testimony prep	0.25
06/01/21	Miller, Scott	Draft CUPA testimony	2.00
06/02/21	Miller, Scott	Draft CUPA testimony	4.50
06/03/21	Miller, Scott	Testimony updates	0.25
06/08/21	Miller, Scott	Emails re testimony	0.25
06/11/21	Miller, Scott	Review testimony revisions and related emails	0.25
		Sub-Total - Cost of Service Study and Direct Testimony	**78.25**

Date	Staff Name	Description	Hours
04/28/21	Holliday, Courtney	Reviewing data request questions and looking into filing template	1.25
05/05/21	Miller, Scott	Review discovery questions and discuss with C. Holliday	0.75
05/06/21	Miller, Scott	Review files and discovery request	2.25
05/07/21	Holliday, Courtney	Researching data request questions and working group call to discuss questions	1.00
05/07/21	Miller, Scott	Working group call and related re discovery request	1.00
05/09/21	Miller, Scott	Revise COSS and respond to discovery request	1.00
05/14/21	Holliday, Courtney	Discussion with Scott regarding cost of service updates	0.25
05/14/21	Miller, Scott	Revisions to Water and Sewer reports for new revenue requirements	4.00
05/17/21	Hadler, Scott	Discuss data request	1.00
05/17/21	Miller, Scott	Revisions to COSs for new revenue requirements	2.00
05/20/21	Miller, Scott	Research and respond to discovery questions	1.25
05/21/21	Miller, Scott	Working group emails re discovery	0.25
06/22/21	Miller, Scott	OCA discovery request - clean up Excel files and post to Teams	1.00
07/12/21	Miller, Scott	Emails re hearing schedule	0.25
07/16/21	Miller, Scott	Emails re discovery	0.25
07/22/21	Miller, Scott	Emails re discovery	0.25

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Project Name: 2021 COS (CUPA)
Date: September 6, 2021
Invoice # BTMA11071

Date	Staff Name	Description	Hours
08/13/21	Miller, Scott	Begin review of rebuttal case	1.00
08/16/21	Miller, Scott	Review other party testimony, rebuttal prep and discovery prep	1.00
08/17/21	Miller, Scott	Rebuttal planning meeting	0.75
08/24/21	Hadler, Scott	Billing info/rebuttal testimony	1.25
08/24/21	Miller, Scott	CUPA rebuttal research and planning	1.00
08/24/21	Miller, Scott	Discussion with S. Hadler, A. Dickson and P. Brown re rebuttal testimony	0.75
08/25/21	Miller, Scott	Working group emails	0.25
08/25/21	Miller, Scott	Review and comment on Dickson rebuttal testimony	1.25
08/31/21	Miller, Scott	Working group emails re hearing prep	0.25
09/01/21	Miller, Scott	Working group emails	0.25
09/03/21	Miller, Scott	Working group emails re surrebuttal testimony and hearing prep	0.75
09/04/21	Miller, Scott	Working group emails re rejoinder testimony	0.25
09/04/21	Miller, Scott	Review and comment on rejoinder	1.00
		Sub-Total - Discovery, Other Party Review, Rebuttal, Rejoinder, Hearing Prep	**27.50**
		Total Hours	**105.75**

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Hawke McKeon & Sniscak LLP
ATTORNEYS AT LAW

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Harrisburg, PA 17101
Phone: 717-236-1300
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Federal ID No. 23-2194794

CUPA Exhibit PB-1RJ

Allen Wilt
Utilities, Inc.
Corix Group of Companies
500 W Monroe Street, Suite 3600
Chicago, IL 60661

September 10, 2021
Matter No. 1257.0012

Re: 2021 Rate Case

Date	Statement Number	Amount Billed
12/09/2020	201387	$ 1,940.00
01/29/2021	210033	$ 687.50
03/31/2021	210300	$ 605.00
04/30/2021	210424	$ 657.50
05/31/2021	210555	$ 4,010.00
06/30/2021	210659	$19,932.50
07/31/2021	210763	$24,140.00
08/30/2021	210857	$ 5,780.75
09/07/2021	210876	$28,533.71
09/07/2021	210877	$ 8,642.50
	Total Billed	$94,929.46

To ensure proper credit, please include account number and invoice number on remittance checks
Please use the following web address to make payments securely using your credit card or bank account:
https://secure.lawpay.com/pages/hawkemckeonsniscak/operating

CUPA W STATEMENT NO. 4-RJ
September 7, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

REJOINDER TESTIMONY

OF

ANDREW DICKSON

WATER RATE DESIGN

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025206

Rejoinder Testimony of Andrew Dickson

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A: My name is Andrew Dickson. I am a Senior Financial Analyst for Corix Regulated Utilities (US) Inc. ("CRUI"), formerly known as Utilities, Inc.[1] which changed its name to CRUI and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of UI. My business address is 500 W Monroe Street, Suite 3600, Chicago, IL 60661.

Q: ARE YOU THE SAME ANDREW DICKSON WHO SPONSORED DIRECT TESTIMONY IN THIS PROCEEDING?

A: Yes.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: The purpose of my testimony is to respond to certain issues discussed in the surrebuttal testimony of the Commission's Bureau of Investigation (I&E) witness Mr. Esyan Sakaya (I&E Statement No. 3SR). I also respond to certain issues raised in the surrebuttal testimony of Office of Consumer Advocate (OCA) witness Mr. Jerome Mierzwa (OCA Statement No. 3SR) and Office of Small Business Advocate (OSBA) witness Mr. Brian

[1] Utilities, Inc. changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

Kalcic (OSBA Statement No. 1SR). I will address the proposed consolidation of rates for Tamiment and the reasonableness of CUPA's proposed rates and rate design.

Q: ARE THERE ANY ATTACHMENTS TO YOUR REJOINDER TESTIMONY?

A: No.

CONSOLIDATION OF RATES FOR TAMIMENT

Q: DO YOU AGREE WITH MR. SAKAYA'S STATEMENT: "HOWEVER, AS SHOWN ON CUPA EXHIBIT CUPA-W EX. SAM-1, THE COMPANY DID NOT INCLUDE A CLASS COSS SHOWING THE RATE OF RETURN AND RELATIVE RATE OF RETURN BY CLASS TO ESTABLISH THE APPROPRIATE REVENUE FOR THE VARIOUS CLASSES OTHER THAN PUBLIC FIRE" (I&E STATEMENT NO. 3-SR AT 9, 16-19)

A: Mr. Sakaya's statement is true that CUPA-W Ex. SAM-1 does not show "the rate of return and relative rate of return by class to establish the appropriate revenue for the various classes" (I&E Statement No. 3 at 9). However, Mr. Sakaya wields this observation to determine that the class cost of service is not determinable from CUPA-W Ex. SAM-1; this is not accurate. As evidenced throughout CUPA's water cost of service study, there are no class-specific peaking factors developed from which to create differentiated assignments per billing unit (bills, volumes, equivalent flow meters) for classes. In this way, CUPA has produced a clear class cost-of-service study; there is only one set of demand characteristics used, which are those for the combination of all customers (phrased another way: for the entirety of CUPA), so there is only one class.

Mr. Sakaya goes on to note that CUPA has determined an appropriate revenue [requirement] for the…Public Fire [class]", so he does not deny that CUPA's class cost of

1 service for fire protection is clearly identified (I&E Statement No. 3 at 9, 16-19). All other
2 costs are the responsibility of the general CUPA customer, CUPA's sole 'class' in its cost-
3 of-service study.

4 CUPA proposed a low-income residential rate (and continues to advocate for its
5 approval). A rate design (not cost-of-service) choice was made to isolate residential
6 customer revenue requirements from commercial customer revenue requirements such that
7 commercial customers would not participate in the support of participants in CUPA's
8 proposed low-income rate (CUPA has made no attempt to hide this, and has been forthright
9 in how it has designed this rate – more on this topic later). This is clearly demonstrated in
10 CUPA W Exhibit AWD-1R, where CUPA takes its total volumetric revenue requirement
11 (required from CUPA's one class, identified in its cost-of-service study) of $1,639,167 and
12 splits it into residential and commercial components based on volume. As demonstrated
13 here, the 'Basic Volumetric Rate' calculated for Residential and Commercial customers is
14 exactly the same, at $10.990; this is only possible because the volumetric costs have been
15 separated proportionally to the base unit (volumes), thus no difference in the cost-to-serve
16 a unit of volume to a commercial customer of a residential customer has been elucidated.
17 This is all fully consistent with CUPA's one-class, cost-of-service study. This separation
18 only serves to provide CUPA with the opportunity to develop a separate residential rate
19 such that commercial customers, who will not be eligible for the low-income rate, do not
20 participate in the support for that rate.

21 CUPA's rate design continues from here to produce residential rates that are
22 different from the "Basic Volumetric Rate", which is what commercial customers
23 experience. There is no demonstrable need to show "the rate of return and relative rate of

return by class to establish the appropriate revenue for the various classes", as Sakaya implies, when there is only one true class in CUPA's cost-of-service study. CUPA's separation of residential and commercial customers is purely a rate design choice and is not driven by the allocation of costs.

Q: HOW DO YOU RESPOND TO MR. SAKAYA'S STATEMENT "THE COMPANY FAILED TO ADDRESS WHY INCREASING THE PUBLIC FIRE SERVICE RATE 84.5% TO $59.37 PER MONTH DOES NOT CONSTITUTE RATE SHOCK" (I&E STATEMENT NO. 3-SR AT5 11, 18-21)?

A: Mr. Sakaya has failed to provide evidence that CUPA's proposed increase constitutes rate shock. CUPA's other customers are already forced to pay for 75% of the costs associated with public fire protection; any more is a gross injustice to regular CUPA customers, whom have costs of their own that they must pay for.

CUPA has not designed a punitive public fire protection charge, nor has it designed a rate that is out of compliance with Section 1328 of the Public Utility Code (post-correction in rebuttal testimony). A primary goal in any cost-of-service study and subsequent rate design is to provide clarity on why rates are the way they are. Customers lose sight on the 75% of public fire protection costs that are rolled into their rates, but at least the remaining 25% is charged back to customers through their public fire service provider, whether through local taxes or some other mechanism, rather than obfuscated in their base rates. This leaves less of a misunderstanding of why CUPA's customers are charged the way they are, and demonstrates the cost of the service that these public fire protection customers are ultimately providing. CUPA customers are the ultimate benefactor of fire protection services, so it is not unfair for them to ultimately pay for it.

However, the manner through which they ultimately pay for it should be clear. To the extent that additional subsidization is requested from CUPA customers of the public fire protection class, CUPA will design an explicit surcharge per equivalent meter labeled "public fire protection fee", to ensure clarity for CUPA customers for what they are paying. It is CUPA's preference to simply comply with Section 1328 and have no subsequent need for additional commentary in its tariff.

Q: HOW DO YOU RESPOND TO MR. SAKAYA'S STATEMENT "THE COMPANY BELIEVES THAT THE I&E RECOMMENDATION WILL CAUSE OTHER CUSTOMERS TO SUBSIDIZE THIS LARGE CUSTOMER AND THAT A GRADUAL INCREASE WILL ONLY INCREASE THE SUBSIDY TO THIS LARGE CUSTOMER" IN REFERENCE TO THE 6-INCH BASE CHARGE, (I&E STATEMENT NO. 3-SR AT 14)?

A: This is not a belief – it is a fact. CUPA's cost-of-service study clearly assigns costs based on equivalent flow meters, and to the extent that that allocation methodology is not reflected in rates, it causes subsidization of CUPA's large-meter customers relative to the base rates imposed on other customers. This is a result of the existing design of CUPA's rates, which do not properly represent AWWA flow equivalencies or CUPA's billing costs per bill. CUPA's proposed rates do. I reiterate, this is not a belief; it is a fact that Mr. Sakaya's proposed 6-inch customer fixed charge will create a subsidization of these customers at the expense of other CUPA customers.

Q: DOES CUPA AGREE WITH MR. SAKAYA'S STATEMENT "OVER TIME, THE SIX-INCH METER CHARGE WILL INCREASE AND EVENTUALLY REFLECT A MORE

REASONABLE RECOVERY OF THE APPROPRIATE COSTS ALLOCATED TO A SIX-INCH CUSTOMER" (I&E STATEMENT NO. 3-SR AT 15-16)?

A: This is conspicuously false in Mr. Sakaya's proposal. Mr. Sakaya has proposed CUPA's 6-inch customer charge be increased at the same rate as the overall system increase (he identified this as 36.9%) (I&E Statement No. 3-SR at 13). This will never fix the inequity between meter sizes, as it suggests maintaining them at their current ratios. Worse yet, Mr. Sakaya proposes various adjustments to the smaller meter size charges in this case, which will only cause further divergences, and none of which are based on well-accepted cost allocation methodologies, which CUPA has employed both in its cost-of-service study and in its rate design.

Q: SHOULD THE COMMISSION CONSIDER THE ABILITY TO DEMAND WATER WHEN CONSIDERING RATE DESIGNS?

A: The Commission should absolutely consider the propensity to demand water when considering rate designs – if the Commission did not, it would never approve rates scaled by AWWA meter flow equivalencies, which is common practice for base charges in any water rate design. This is done to clarify that these customers have the ability to demand more water, faster, and as such require different infrastructure to be ready to serve. If the lack of flows were a reasonable justification for no charge, the Commission would approve no base rates and only volumetric rates – this is simply not the case. CUPA has to be ready to serve the customers connected to its systems, and has developed charges that represent that. If Mr. Sakaya actually held this belief, he would have proposed no difference in the base charge for 5/8-inch customers and 6-inch customers, and may have even proposed base charges of $0. He has not done this.

Q: DO YOU AGREE WITH MR. SAKAYA'S INTERPRETATION OF THE CITED TEXT WHERE HE STATES "THIS 0.45 AND THE CORRESPONDING RATES WERE DETERMINED BY USING THE BILL OF AN AVERAGE USAGE CUSTOMER (CUPA-W ST. NO. 6-r, P. 16)" IN REFERENCE TO CUPA'S AVAILABILITY CHARGES (I&E STATEMENT NO. 3-SR AT 17)?

A: No. CUPA-W Statement No. 6 at 16 (not 6-R, as appears to be a typo by Mr. Sakaya) states:

> "Consistent with the calculations in CUPA's last cost of service study and rate case, we used 0.45 as the equivalency factor for the availability fee on page 3 of the report which results in 21 equivalent availability fee billing units in Penn Estates and 148 equivalent availability fee billing units in Tamiment that were then incorporated throughout the cost of service allocations."

It is essential to clarify additional statements here in this section of CUPA W Statement No 6 at 16 were made by Mr. Miller in description of those rates he produced at the end of his cost-of-service study, not those proposed by CUPA. As clearly stated here in this section quoted, costs were allocated to availability customers based on a 0.45 equivalency factor, relative to 5/8-inch meters. CUPA utilized a 0.45 factor to scale non-billing costs to be recovered through its fixed charges for availability customers, fully consistent with the way costs were allocated in its study to these same customers. As demonstrated in CUPA's cost-of-service study, transmission and distribution costs are indeed allocated to the functional cost category of 'meters and services', as implied should be done by Mr. Sakaya (I&E Statement no. 3-SR at 17). Further, CUPA's analysis is consistent with that underlying existing rates (as evidenced through Mr. Miller's references

to CUPA's previous case). Consistency is also a best practice when approaching cost allocations and rate design.

CUPA did not fail to perform a proper analysis; CUPA's cost-of-service study clearly describes how costs were allocated for availability bills, and CUPA's rate design clearly follows that same methodology to recover costs from those customers.

Q: DO YOU AGREE WITH MR. SAKAYA'S STATEMENT "THE COMPANY FAILED TO EXPLAIN WHY THE ADDITIONAL REVENUE SHOULD NOT BE APPLIED TO THE MONTHLY CUSTOMER CHARGES" (I&E STATEMENT NO. 3-SR AT 20)?

A: CUPA has clearly identified the costs driving its fixed charges, and has clearly detailed the subsequent design of rates to recover those charges. Via modification of a handful of those fixed charges, as suggested by Mr. Sakaya via his suggestion that only the 5/8-inch customer charge change, the clear relationship established in CUPA's prudent, and typical, rate design is broken. Mr. Sakaya repeatedly suggests this relationship holds no merit, through his suggested modifications to availability charges, the 6-inch charge in isolation of other fixed charges, and here in his recommendation that only the 5/8-inch charge be modified. As stated in my rebuttal testimony, "[a]ddressing changes through volumetric rates provides a simpler and more effective way to address changes in the revenue requirement" (CUPA W St. No. 4-R at 20-21). This ensures that the fundamentally-sound design of CUPA's fixed charges is maintained (such that clear costs per equivalent meter and per bill are used to build up base charges), and still accomplishes the end goal of making any adjustments necessary to the overall revenue recovery. To be clear, this is CUPA addressing Mr. Sakaya's proposed scale back – CUPA disagrees with

Mr. Sakaya's recommendation, and suggests that only volumetric rates should be used to address any change in the revenue requirement.

Q: DO YOU HAVE COMMENTARY IN RESPONSE TO MR. SAKAYA'S STATEMENTS REGARDING HIS REJECTION OF CUPA'S LOW-INCOME RATE, SINCE "A LOW-INCOME USAGE RATE[S] RESULTS IN A REVENUE SHORTFALL THAT MUST BE RECOVERED FROM OTHER CUSTOMERS" (I&E STATEMENT NO. 3-SR AT 21)?

A: Mr. Sakaya's general rate recommendations all constitute varying degrees of subsidization, as he repeatedly suggests divergences from CUPA's cost-of-service study. His coyness here, where subsidization is for the explicit purpose of helping CUPA's most vulnerable customers, does not make sense in this context. As stated in direct testimony, CUPA has utilized the same definitions of affordability as the US EPA and the AWWA (CUPA W Statement No. 4 at 5) to inform its low-income rate design. To provide further context, the US EPA defines affordability based on the share of income necessary to pay for service (for water service, affordable service is defined as requiring 2.5% or less of household income). This figure, share of income, provides a clear basis from which to create a low-income rate. CUPA uses this figure by identifying what percentage of median household income a typical low-income household in Pennsylvania might earn (identified as the federal poverty-level income for a household of 3), and applies that ratio to its volumetric rates proposed. This ensures that the share of income required for any given number of residential gallons used is the same for a low-income household as it is for a regular-income household. This discount is the most appropriate level to provide for low-income customers, as it fits squarely within the parameters for affordability defined by the

EPA. Mr. Sakaya's comparisons to PAWC are irrelevant to these observations. It is also clear that PAWC's low-income program contains a different structure than that proposed by CUPA, so the value of Mr. Sakaya's comparison is diminished.

Q: DO YOU AGREE WITH MR. SAKAYA'S STATEMENT "…CUPA APPEARS TO AGREE WITH I&E REGARDING HOW RESIDENTIAL CUSTOMER WILL SUBSIDIZE LOW-INCOME CUSTOMERS" (I&E STATEMENT NO. 3-SR AT 23)?

A: Yes, CUPA agrees. This is an explicit design choice, and has been discussed throughout testimony. This particular subsidy is modest, affordable, and in the best interest of CUPA customers. Those customers who have the potential to benefit are those exposed to the impact (i.e., residential customers), and that impact is diminutive relative to the benefit it bestows on low-income customers.

Q: DO YOU AGREE WITH MR. SAKAYA'S STATEMENT "…THE COMPANY BELIEVES THAT ITS PROPOSE ONLY INCREASE THE AVERAGE RESIDENTIAL BILL BY $3.28 PER BILL AND SINCE THIS $3.28 PER BILL DOES NOT MAKE THE CUPA BILL UNAFFORDABLE, IT SHOULD BE APPROVED" (I&E STATEMENT NO. 3-SR AT 23)?

A: CUPA does not believe this to be the case, it knows what the impact is to residential customers. Without the low-income rate, the regular residential rate identified in CUPA W Exhibit AWD-1R would be $10.990 per Kgal. Please refer to CUPA W Statement No. 4-R at 18 for more detail.

Q: DO YOU HAVE COMMENTARY ADDRESSING MR. SAKAYA'S STATEMENT "BECAUSE THE COMPANY'S LOW-INCOME PROGRAM CAUSES OTHER

CUSTOMERS' USAGE RATES TO BE HIGHER, THE COMMISSION SHOULD CONSIDER THIS HIGHER COST AND CONSIDER THE PUBLIC INPUT TESTIMONY WHERE CUSTOMERS TESTIFIED AS TO THE HARDSHIP THIS INCREASE WILL CAUSE AND NOT GIVE WEIGHT TO THE COMPANY'S CONTENTION THAT THE EXTRA $3.28 ON THE AVERAGE RESIDENTIAL BILL IS AFFORDABLE" (I&E STATEMENT NO. 3-SR AT 23-24)?

A: CUPA has proposed this low-income rate because of the significant benefit it stands to provide to eligible customers, at an affordable cost to other residential customers. Discussion of the calculations that prove that this is affordable are provided in CUPA W Statement No. 4-R at 18. It is true that there are other factors causing residential bills to increase, but it does not change the fact that the impact of CUPA's low-income rate on regular residential bills is small and affordable, in the full context of the proposed rate increase. This is not an allegation, as suggested by Mr. Sakaya, it is a fact: CUPA's proposed regular residential bill per month is $73.27. A full year would cost $879.24, which is only 1.39% of the median household income of $63,463 in Pennsylvania. This is below the US EPA threshold of 2.5% for affordable water service. While CUPA understands the concerns of its customers regarding its proposed increase, it is in the best interest of CUPA's most vulnerable customers, who can least tolerate an increase in rates, to approve CUPA's proposed low-income rate.

Q: DO YOU AGREE WITH MR. SAKAYA'S STATEMENT "THE COMPANY BELIEVES THAT GRADUALISM SHOULD NOT APPLY TO THE SIX-INCH CUSTOMER DUE TO THE UNFAIR SUBSIDIZATION BY OTHER CUSTOMERS,

BUT IT IMPLIES SUBSIDIZING THE LOW-INCOME PROGRAM IS AFFORDABLE" (I&E STATEMENT NO. 3-SR AT 25)?

A: CUPA does not wish to "have it both ways", as Mr. Sakaya states (I&E Statement No. 3-SR at 25). CUPA wishes to minimize subsidization, and has made an explicit and thoroughly-discussed exception to produce a low-income rate. Mr. Sakaya's suggestion of subsidizing 6-inch customers but not low-income customers is far more contradictory, as his rationale is not based on the facts surrounding 6-inch customers' ability to afford service. The level of subsidization is different, as pointed out by Mr. Sakaya (the shift in revenue to produce the low-income rate is greater than that to discount the 6-inch base charge); however, the justification for the divergence could not be farther apart. CUPA firmly believes that it is in the best interest of all CUPA customers to establish a low-income rate that enables affordable water service for its low-income customers. The health of the entire community is dependent on the health of individuals, as is exemplified in daily life throughout the ongoing pandemic, and has always been the case. Water is essential to enabling hand-washing, bathing, and other hygienic activities that ensure the health of the community – it is wildly illogical to compare efforts to ensure households have water service with ensuring large, commercial connections maintain unfairly inexpensive service.

Q: IS MR. SAKAYA'S HOUSE PRICE DATA RELEVANT TO YOUR USE OF PENNSYLVANIA INCOME AND POVERTY FIGURES?

A: No. Mr. Sakaya appears to conflate home prices with financial well-being. However, CUPA's low-income customers may not even own homes in its service territory; it is more probable that its low-income customers are renters. Further, one's home

ownership does not determine one's income. Mr. Sakaya's research is fundamentally flawed, and holds no analytical merit.

Data from the 2019 American Community Survey for East Stroudsburg indicates a median household income of $51,016 and a poverty rate of 17.4% (https://www.census.gov/quickfacts/eaststroudsburgboroughpennsylvania). Relative to those figures used by CUPA in its rate design ($63,463 and 12.0%, respectively), these figures indicate a less sound financial footing in CUPA's service territory. CUPA's assumptions are conservative and reasonable, and does not propose any change to these figures to those of East Stroudsburg.

CUPA will use actual participation data in its next rate case, should its low-income rate be approved here, to update the share of customers it assumes will participate (and their usage). However, without actual data on participation available at present, CUPA has used the most reasonable, conservative, and reliable data it can to produce assumptions for its low-income rate design.

Q: DO YOU AGREE WITH MR. MIERZWA'S STATEMENT "A COST OF SERVICE STUDY SOLELY FOR TAMIMENT CUSTOMERS WOULD BE OF NO VALUE IN THIS PROCEEDING SINCE CUPA EVENTUALLY INTENDS TO CONSOLIDATE THE WATER RATES OF ALL OF ITS SERVICE TERRITORIES" (OCA STATEMENT No. 3-SR AT 3)?

A: While I agree that it is not beneficial to perform a separate cost-of-service study in the context of full consolidation of Tamiment into CUPA, it is important to recognize the relative changes in rates that Tamiment customers would experience without consolidation. This is the purpose of CUPA W Exhibit DMC-2R. In context, Mr. Mierzwa is discussing

CUPA's proposed fixed charges – CUPA has fully described its rate design for fixed charges throughout testimony, and has already explained why those charges are not the same as its existing charges (as proposed by Mr. Mierzwa).

Q: DO YOU HAVE COMMENTARY IN RESPONSE TO MR. MIERZWA'S STATEMENT "MR. DICKSON MISINTERPRETS MY RECOMMENDATION. THE 30% OF REVENUE DIFFERENCE WOULD THEN BE REFLECTED IN THE CONSOLIDATED VOLUMETRIC CHARGE" (OCA STATEMENT No. 3-SR AT 4)?

A: CUPA appreciates Mr. Mierzwa's clarification. However, Mr. Mierzwa has not produced a rate design that fully recovers CUPA's revenue requirement, as he indicates, and CUPA evidenced that fact in CUPA W Exhibit AWD-1R, where Mr. Mierzwa fails to make the necessary adjustments to ensure full recovery.

Q: DO YOU HAVE COMMENTARY IN RESPONSE TO MR. MIERZWA'S STATEMENT "AS INDICATED PREVIOUSLY, THE LENGTH OF TIME SINCE THE LAST INCREASE IN TAMIMENT'S AVAILABILITY CHARGE IS IRRELEVANT. CUSTOMERS NEED AN OPPORTUNITY TO ADJUST TO CHANGING PRICES" (OCA STATEMENT No. 3-SR AT 4)?

A: CUPA understands Mr. Mierzwa's position that customers need an opportunity to adjust to changing prices. However, it is not the responsibility of other CUPA customers to subsidize Tamiment availability customers (or any of the other customers whose rates Mr. Mierzwa suggests partial consolidation for) until those customers are fully adjusted to changing prices. Necessarily, those other CUPA customers have to endure and adjust to changing prices to ensure that their counterparts in Tamiment do not. Tamiment customers

have benefited from years without rate increases, and it is most fair to bring them current, same as other CUPA customers.

Q: CAN YOU CLARIFY YOUR STATEMENT REGARDING FIXED CHARGE RECOVERY, WHICH MR. MIERZWA DISCUSSES AT OCA STATEMENT NO. 3SR AT 6?

A: Yes. I should clarify that CUPA's fixed charge recovery percentage, not just its fixed charges, has increased solely due to the uncollected fire protection revenue requirement. Thus, the only adjustment that is not discussed between Mr. Mierzwa's proposed rates and CUPA's is the fixed charge recovery adjustment. CUPA has discussed this adjustment throughout testimony and stands by those statements. Mr. Mierzwa repeatedly states that "there is no cost basis to increase …these customer charges", but makes adjustments to other rates that are not cost-based. A fixed charge recovery adjustment is not abnormal and helps protect the stability of customer bills and the revenue recovery of the utility.

Q: DO YOU HAVE FURTHER COMMENTARY SURROUNDING ADJUSTMENTS TO RATES FOR CHANGES IN THE REVENUE REQUIREMENT, IN RESPONSE TO MR. MIERZWA (OCA STATEMENT NO. 3-SR AT 7)?

A: Yes. Mr. Mierzwa suggests modifying all rates now, with the exception of fire protection rates (OCA Statement No. 3SR at 7). This is a more reasonable suggestion than (my understanding of) his initial suggestion of only modifying volumetric and availability rates. However, it fails to recognize the validity of CUPA's fixed charge rate design. This is an outstanding topic of discussion, and is addressed above. The most exacting way to resolve the topic would be to fully analyze what changes to the revenue requirement are made, how they would be allocated in CUPA's cost-of-service study, and reproduce

CUPA's rates as an outcome. This will increase rate case expense unnecessarily for CUPA customers through additional time and energy from CUPA's expert cost-of-service witness, whereas a simpler approach of adjusting only volumetric rates produces a result that, in most cases, will be the same as that discovered through this process. It is CUPA's preference to take this approach to mitigate any additional rate case expense and achieve a similar end result.

Q: DO YOU AGREE WITH MR. KALCIC'S STATEMENT "THE DECISION TO CONSOLIDATE A RATE AREA IN A GIVEN PROCEEDING SHOULD BE BASED PRIMARILY ON THE SIZE OF THE RATE INCREASE ASSOCIATED WITH FULL RATE CONSOLIDATION" (OSBA STATEMENT NO. 1-S AT 3)?

A: I disagree. The decision to consolidate a rate area in a given proceeding consists of two primary data points, not one; where rates would go should the area remain unconsolidated, and where rates would go should the area be consolidated. CUPA has provided CUPA W Exhibit DMC-2R to provide insight on the former, and CUPA's proposed rates provide the corresponding information about the latter. Notably, Mr. Kalcic states "if full rate consolidation would cause rate shock", but ignores the rate experience should Tamiment go unconsolidated. This is the information Mr. Kalcic is not considering in his response. As noted in my rebuttal testimony, Tamiment's water rates would need to increase by over 185% if it were to remain unconsolidated, which is higher than the increase that Tamiment experiences in CUPA's proposed rates. CUPA W Statement No. 4-R at 4. This result is supported by Mr. Kalcic's statements, as CUPA's proposed rates diminish the bill impact that Tamiment customers would otherwise experience.

Mr. Kalcic proceeds to discuss a multi-case approach to consolidation, which has been addressed repeatedly through testimony – CUPA does not support this approach, as it leaves CUPA's other customers subsidizing Tamiment customers, and adds additional complexity to CUPA's tariff that will lead to increased customer service and administrative burden that CUPA's customers will, ultimately, be responsible for bearing. Tamiment customers have benefited from years without a rate change, which is a poor excuse to ask other CUPA customers to tolerate even greater rate increases.

Mr. Kalcic states "Similarly, I would argue that the stand-alone increase otherwise applicable to a given rate area is immaterial to the issue of rate consolidation, inasmuch as rate consolidation is grounded on the principle of single tariff pricing, under which utility rates are based on system average rather than stand-alone costs". Mr. Kalcic, however, does not advocate for consolidated rates or single-tariff pricing. Instead, he advocates for a different tariff for Tamiment customers to partially consolidate. The stand-alone increase otherwise applicable to a given rate area, which has not been consolidated, is directly material to the issue of rate consolidation, and oftentimes the strongest argument for consolidation. This is the case here; Tamiment customers will benefit from consolidation, and Mr. Kalcic's belief that that is immaterial does not change the fact that it is of critical importance to considering consolidation in this case.

Q: DO YOU HAVE COMMENTARY REGARDING MR. KALCIC'S STATEMENT "MY RECOMMENDATION IN SUPPORT OF PARTIAL CONSOLIDATION OF THE TAMIMENT RATE AREA WOULD NOT RESULT IN ANY REVENUE SHORTFALL TO THE COMPANY" (OSBA STATEMENT NO. 1S AT 12, LINES 13-20)?

A: Mr. Kalcic refers back to his direct testimony, where he discusses his recommendations. However, Mr. Kalcic has modified his recommendation, now stating "However, that initial revenue shortfall would be eliminated by subsequently increasing all consumption charges by the amount necessary to eliminate the shortfall, while maintaining the differential in the Consolidated and Tamiment consumption charges at $2.075 per thousand gallons" (OSBA Statement No. 1S at 4). Mr. Kalcic's recommendation here is still inconsistent – he recommendation of elimination of "one-half of the existing difference in GMS consumptions charges of $4.15" (OSBA Statement 1 at 12) does not consider the moving target he creates for the difference in those charges. Moving only $2.075 per Kgal will necessarily fail to move halfway, as the end goal (CUPA's rate) must increase to pick up the shortfall. While Mr. Kalcic's updated suggestion is a significant improvement in that it clarifies an intent to fully recover CUPA's revenue requirement, it does not fully perform its intended function, nor does it consider the full context of the case (as discussed throughout my testimony).

Q: DOES THIS CONCLUDE YOUR PREPARED REJOINDER TESTIMONY?

A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3025206 & R-2021-3025207

CUPA Statement No. 5-RJ

Rejoinder Testimony of

Dylan W. D'Ascendis, CRRA, CVA

on behalf of

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

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I. INTRODUCTION, PURPOSE, AND SUMMARY

Q. Please state your name and business address.

A. My name is Dylan W. D'Ascendis. I am a Partner at ScottMadden, Inc. My business address is 3000 Atrium Way, Suite 200, Mount Laurel, NJ 08054.

Q. Are you the same Dylan W. D'Ascendis who provided Direct and Rebuttal Testimonies in this proceeding?

A. Yes, I am.

Q. What is the purpose of this Rejoinder Testimony?

A. The purpose of this Rejoinder Testimony is to provide testimony on behalf of Community Utilities of Pennsylvania, Inc., ("CUPA" or the "Company") in response to certain aspects of the surrebuttal testimonies of Mr. Christopher Keller, witness for the Pennsylvania Public Utility Commission's ("PA PUC" or the "Commission") Bureau of Investigation and Enforcement ("I&E") and Mr. Noah D. Eastman, witness for the Pennsylvania Office of Consumer Advocate ("OCA") (collectively referred to as the "Opposing Witnesses") as they pertain to CUPA's allowed return on common equity ("ROE"), which the Company should have the opportunity to earn on its authorized jurisdictional rate base.

Q. Please summarize your Rejoinder Testimony.

A. My Rejoinder Testimony addresses certain aspects of the Opposing Witnesses' surrebuttal testimonies. Because rejoinder testimonies are limited in scope, I will only address new arguments made by the Opposing Witnesses and cite to my Direct and Rebuttal Testimonies as appropriate. After reviewing the Opposing Witnesses' surrebuttal testimonies, nothing has caused me to change my recommended ROE of 10.35%, which remains reasonable.

II. RESPONSE TO THE SURREBUTTAL TESTIMONY OF I&E WITNESS KELLER

Q. Please summarize Mr. Keller's surrebuttal testimony.

A. Mr. Keller discusses the following in his surrebuttal testimony: (1) that calculations for the ROEs in this proceeding and the ROE for the distribution system improvement charge ("DSIC") should be different; (2) that he did not rely entirely on the results of his discounted cash flow ("DCF") model for his recommended ROE; (3) that the DCF is more reliable than any other model when estimating the ROE; (4) that the DCF does not misstate the investor-required return when market-to-book ("M/B") ratios are not at unity; (5) that he maintains the yield on a 10-year Treasury bond is the appropriate risk-free rate in a capital asset pricing model ("CAPM") analysis; (6) that projections of interest rates should only be used during the period when rates are expected to be in effect; (7) that the empirical CAPM ("ECAPM") is inappropriate for cost of capital purposes; (8) that he maintains the ROE for the Company should not be adjusted due to its smaller relative size; and (9) that my non-utility proxy group should not be considered.

A. DISTRIBUTION SYSTEM IMPROVEMENT CHARGE ROE

Q. Mr. Keller states that the PA PUC Bureau of Technical Utility Services ("BTUS") determines the DSIC ROE differently than what the PA PUC I&E does in rate cases.[1] Please respond.

A. I agree with Mr. Keller that the PA PUC BTUS determines its DSIC ROE differently than Mr. Keller does in his analysis, but I do not agree that the ROE calculated reflects risk different than the risks facing water and wastewater utilities.

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[1] Keller Surrebuttal Testimony, at 4.

As Mr. Keller states, the DSIC is designed to encourage utilities to replace aging infrastructure between rate cases, but the goal of the PA PUC BTUS' calculation of the DSIC ROE is to determine the required equity return for utility investments, which is the same assignment tasked to us in this proceeding.

Q. How does the PA PUC determine the DSIC ROE?

A. The BTUS Report on the Quarterly Earnings of Jurisdictional Utilities for the year ended March 31, 2021 states in Attachment D that "*The Commission determines the ROE used for DSIC purposes* based on the range of reasonableness from the DCF barometer group data, CAPM data, recent ROEs adjudicated by the Commission and informed judgment."[2] From this information and information in subsequent attachments, the BTUS correctly relies on multiple analytical models and qualitative factors in determining the DSIC ROE. This is in stark contrast to Mr. Keller's determination of the ROE for CUPA, which narrowly applied the DCF model, eliminated CAPM results, and provided no meaningful qualitative analysis regarding CUPA's operations compared to his proxy group. Because of the way Mr. Keller conducted his analysis, his recommendation understates the Company's ROE.

B. SOLE RELIANCE ON THE DCF MODEL

Q. Does Mr. Keller recognize the fact that all cost of equity models, including the DCF, have limitations?

A. Yes, he does. Mr. Keller states that "I have considered the fact that no method can perfectly predict the return on equity" and that "…no one method can capture

[2] Pennsylvania Public Utility Commission, Bureau of Technical Utility Services, Report on the Quarterly Earnings of Jurisdictional Utilities for the Year Ended March 31, 2021, July 15, 2021.

every factor that influences an investor…",[3] but does not rely on any other model besides the DCF for his recommendation. Clearly, Mr. Keller's sole reliance on the DCF model is at odds with his understanding of the value in considering multiple models to estimate the ROE.

Q. Did you discuss the importance of using multiple models in an ROE analysis?

A. Yes, I did. My review of financial literature and PA PUC Orders supporting the use of multiple models in an ROE analysis is contained on pages 7 through 11 of my Rebuttal Testimony.

Q. Mr. Keller states that investors should know that rates are set on book value, and as such DCF cost rates do not misstate the ROE for companies with M/B ratios different than 1.0.[4] Please comment.

A. First, it is important to note that Mr. Keller acknowledges that the results of the DCF model are set by market rates and that the ROE is set based on book value. My assertion is not that investors are unaware that rates are set at book value, it is that investors invest on market value and require market returns. Because market values and book values differ for utilities, the indicated ROE using the DCF (which uses market prices) will misstate the investor-required return, as discussed in my Rebuttal Testimony.[5]

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3 Keller Surrebuttal Testimony, at 6.
4 Keller Surrebuttal Testimony, at 9.
5 D'Ascendis Rebuttal Testimony, at 11-17.

1 **C. APPLICATION OF THE CAPM**

2 **Q. Mr. Keller states when selecting a risk-free rate for a CAPM analysis, one**
3 **should consider maturity risk and inflation risk.[6] Do you agree?**

4 A. No, I do not. As discussed in my Rebuttal Testimony,[7] the tenor of the risk-free
5 rate used in the CAPM should match the life (or duration) of the underlying
6 investment. Because of this, the yield on the 30-year Treasury bond is the
7 appropriate measure for the risk-free rate. As to inflation risk, the coupon and face
8 amount of a U.S. Treasury bond is assumed to be guaranteed, which means the
9 hypothetical investor would not experience inflation risk as long as they held the
10 bond until maturity. Mr. Keller's considerations regarding maturity and inflation risk
11 should be dismissed by the Commission.

12 **Q. Do you agree with Mr. Keller's contention that the time period reflected in a**
13 **projected risk-free rate should include the period in which the rates will be**
14 **in effect?[8]**

15 A. Mr. Keller seems to misunderstand investors vs investments. Investors will enter
16 and exit investments; however the actual investment is a long-term prospect and
17 is expected to be outstanding into perpetuity. Because of this, the risk-free rate
18 projections used for a cost of equity analysis should be using the longest time
19 frame available. Considering the source for five to 10-year projected interest yields
20 is a source Mr. Keller trusts (*i.e., BlueChip Financial Forecasts*), he should have
21 used them in his CAPM analysis.

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6 Keller Surrebuttal Testimony, at 10-11.
7 D'Ascendis Rebuttal Testimony, at 22-23.
8 Keller Surrebuttal Testimony, at 11.

Q. Does Mr. Keller advance any new arguments regarding the use of the ECAPM in his surrebuttal testimony?

A. No, he does not. As such, my rebuttal to his arguments stand as stated in my Rebuttal Testimony.[9]

D. FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE

Q. Mr. Keller continues to refute your size adjustment. Does he provide additional arguments in his surrebuttal testimony?

A. Yes, he does. Mr. Keller refutes Dr. Zepp's article refuting Dr. Wong's article. He reiterates that the size studies I used include non-regulated companies and refutes that the Commission accepted my 100-basis point size adjustment in the Citizens' Electric Company of Lewisburg, PA ("Citizens'") proceeding (Docket No. R-2019-3008212). Notably, Mr. Keller did not address my independent analysis linking size and risk for utilities using *Value Line* data.

Q. Did you analyze additional relationships between size and risk for utility companies?

A. Yes, I did. I also analyzed utilities' Safety Ranking, Financial Strength, Price Stability, and Earnings Predictability measures from *Value Line* for the utilities that comprise their Standard and Small & Mid Cap Editions and compared those measures to their respective market capitalizations.

Q. What did those analyses reveal?

A. Those analyses revealed the following:

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[9] D'Ascendis Rebuttal Testimony, at 24-27.

- As market capitalization increased, company Safety Ranking improved (significant at 95%);
- As market capitalization increased, company Financial Strength improved (significant at 90%);
- As market capitalization increased, company Price Stability improved (significant at 85%); and
- As market capitalization increased, earnings predictability increased (not statistically significant).

These measures, in addition to the analysis presented in my Rebuttal Testimony,[10] shows that size and risk are linked for utility companies, and the contention by the Opposing Witnesses that it (1) does not exist, or (2) does not apply to utility companies, should be dismissed by the Commission.

Q. Mr. Keller discusses that Dr. Zepp's conclusions regarding the size effect for utilities was only based on water companies.[11] Is CUPA a water company?

A. Yes, it is.

Q. Mr. Keller excerpts pages from the Ibbotson <u>Stocks, Bonds, Bills and inflation ("SBBI") 2015 Yearbook</u> which discusses small stocks' recent relative performance to large companies' returns.[12] Please respond.

A. As is shown in the <u>SBBI 2015 Yearbook</u>, one class of stock may outperform any other class of stock over any particular time period, but the key to the investor-required return is risk, or the standard deviation of those stocks, not the absolute

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10 D'Ascendis Rebuttal Testimony, at 31-32.
11 Keller Surrebuttal Testimony, at 15.
12 Keller Surrebuttal Testimony, at 15.

return. It is a fundamental concept of finance that the higher the risk, the higher required return. As shown in the SBBI 2021 Yearbook, the standard deviation of returns for small companies is 31.3%, which is markedly higher than large stocks (19.7%) over the period 1926-2020.[13] Since small companies' return outcomes are more uncertain than larger companies, investors will require larger returns for investing in those companies.

Q. Mr. Keller cites from the SBBI 2015 Yearbook when discussing some of his disagreements regarding the size adjustment. Does the SBBI 2021 Yearbook still contain the size premium?

A. Yes, it does.

Q. Did you claim that the Commission accepted your 100-basis point size adjustment in Citizens' last rate case?

A. No, I did not. I stated that the Commission considered the size of Citizens by awarding a DCF cost of common equity one standard deviation above the mean and median proxy group ROE, as calculated by Citizens'.

Q. What was the implied size adjustment for Citizens' in that proceeding?

A. Given the average of the mean and median DCF result of 8.27%, and the approved ROE of 9.49% (before adjustment for management efficiency), the Commission applied an implicit 122-basis point size adjustment for Citizens'. In view of the above and preceding, there is, indeed, a link between size and risk for utility companies and my specific risk adjustment is appropriate and conservative.

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[13] SBBI 2021 Yearbook, at 6-17.

1 **E. COMPARABLE EARNINGS**

2 **Q. Mr. Keller continues to reject your Non-Utility Proxy Group for use in**
3 **determining the ROE for CUPA.[14] Does Mr. Keller provide additional support**
4 **for his position in his surrebuttal testimony?**

5 A. Yes, he does. While it seems like Mr. Keller is still confused about my selection
6 criteria,[15] he notes that the non-utility companies may not be comparable to the
7 utility proxy group in the future, and that the use of non-utility proxy groups violate
8 *Hope* and *Bluefield*.[16]

9 **Q. Do you agree with Mr. Keller that non-utility companies comparable in risk**
10 **to the utility proxy group can change over time?**

11 A. Yes, I do. The cost of equity is a snapshot of the investor-required return at a date
12 certain, using current and expected market data. When market conditions change,
13 and company compositions change, both utility and non-utility companies may
14 cycle in and out of comparable groups. For example, in my Direct Testimony, I
15 included Essential Utilities, Inc. in my Utility Proxy Group, but eliminated them in
16 my updated analysis because they no longer met my selection criteria. The fact
17 of the matter is, at this time, the companies selected for the Non-Utility Proxy Group
18 are comparable to the Utility Proxy Group.

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14 Keller Surrebuttal Testimony, at 18-20.

15 I use ranges of unadjusted beta (which measure market risk) and the standard error of the regression (which measures non-market risk) to select my Non-Utility Proxy Group, and Mr. Keller only mentions beta in his surrebuttal testimony.

16 Keller Surrebuttal Testimony, at 18-20.

Q. In order to provide a more robust analysis, have you reviewed additional risk measures for each group?

A. Yes, I have. I compared the Safety Ranking, Financial Strength, Price Stability, and Earnings Predictability rankings from *Value Line* for each company in my Utility and Non-Utility Proxy Groups to determine whether these measures are similar.

Table 1: Comparative Measures of Risk – Utility and Non-Utility Proxy Groups[17]

	Safety Ranking	Financial Strength	Price Stability	Earnings Predictability
Utility Proxy Group Avg	3.00	B++	89.17	80.00
Utility Proxy Group Median	3.00	B++	87.50	87.50
Non-Utility Proxy Group Avg.	1.95	A	87.25	74.21
Non-Utility Proxy Group Median	2.00	A	87.50	80.00

As shown on Table 1, the Safety and Financial Strength measures for the Non-Utility Proxy Group are stronger (*i.e.,* less risky) than the Utility Proxy Group, and have similar measures for Price Stability and Earnings Predictability. These measures corroborate my initial evidence that shows the Utility and Non-Utility Proxy Groups are comparable in risk.

Q. Is it your opinion that the use of Non-Utility Proxy Groups violates the principles set forth in *Hope* and *Bluefield*, as represented by Mr. Keller's counsel?[18]

A. No. As discussed in my Direct Testimony,[19] using comparable risk companies to determine a cost of capital for a utility company is consistent with the "corresponding risk" standard in *Hope* and *Bluefield*. Whether the company is

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17 Source: *Value Line* Standard Edition.
18 Keller Surrebuttal Testimony, at 20.
19 D'Ascendis Direct Testimony, at 5.

regulated or not is not contemplated by the United States Supreme Court. While I do agree with Mr. Keller's lawyers that the return in this case should not be based on companies that are not of comparable risk, as discussed above and previously, I have shown that the companies that form my Non-Utility Proxy Group have comparable risk to the Utility Proxy Group, and in turn CUPA.

III. RESPONSE TO THE SURREBUTTAL OF OCA WITNESS EASTMAN

Q. Please summarize Mr. Eastman's surrebuttal testimony.

A. Mr. Eastman discusses the following in his surrebuttal testimony: (1) that I mischaracterized his testimony regarding his reliance on the DCF model results; (2) that his use of current interest rates is appropriate for cost of capital purposes; (3) that geometric mean market risk premiums ("MRP") are appropriate for cost of capital purposes; (4) that estimates of market returns from investment analysts are appropriate for cost of capital purposes; and (5) maintains that a size adjustment is not appropriate for cost of capital purposes.

A. SOLE RELIANCE ON THE DCF MODEL

Q. Mr. Eastman states that you misrepresented his testimony and that he did consider the CAPM in his analysis.[20] Please respond.

A. Mr. Eastman's recommended ROE is the result of his DCF model. While Mr. Eastman does reluctantly admit that the academic literature concerning the applicability of multiple models in my Rebuttal Testimony[21] is not "necessarily incorrect",[22] he does not include any other relevant analysis, quantitative or qualitative.

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20 Eastman Surrebuttal Testimony, at 2.
21 D'Ascendis Rebuttal Testimony, at 79.
22 Eastman Surrebuttal Testimony, at 2.

Q. Mr. Eastman states that PA PUC precedent prevents giving weight to other models besides the DCF.[23] Is he correct?

A. No, he is not. While the PA PUC does primarily base its authorized ROEs on DCF model results, they correctly consider the results of other cost of equity models and other qualitative factors, as shown in the Orders in Dockets R-2013-2360798 and R-2014-2402324, cited in my Rebuttal Testimony,[24] and in the PA PUC determination of the DSIC ROE, as mentioned above.

Q. Do you agree with Mr. Eastman's claim that you support considering multiple models to calculate the ROE because the DCF model mis-states the investor-required return when M/B ratios are not 1.0?[25]

A. Only in part. As discussed in my Rebuttal Testimony,[26] no one individual model provides the necessary precision, but each method provides useful evidence to facilitate informed judgment. Because of this, one should use multiple models to inform their decision.

B. APPLICATION OF THE CAPM

Q. Has Mr. Eastman provided any new evidence regarding his use of current interest rates in his CAPM analysis?

A. No, he has not. I have explained that the cost of capital and ratemaking are forward-looking, and as such, necessitates projected measures, including interest rates. Mr. Eastman does note that the interest rates used in his CAPM are not forward-looking.[27]

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23 Eastman Surrebuttal Testimony, at 2.
24 D'Ascendis Rebuttal Testimony, at 10-11.
25 Eastman Surrebuttal Testimony, at 3.
26 D'Ascendis Rebuttal Testimony, at 8.
27 Eastman Surrebuttal Testimony, at 4.

Q. Mr. Eastman says that although the arithmetic mean generates a more accurate projection of the required return for the next period, investors' investment horizons extend past the next period, necessitating the use of the geometric mean return.[28] Please respond.

A. Mr. Eastman is correct that the value produced by the arithmetic mean is the expected value for the next period, but since the arithmetic mean is the best estimate for <u>any given year</u>, it would be applicable to all future time periods. Mr. Eastman's concerns regarding the arithmetic mean should be dismissed.

Q. Has Mr. Eastman advanced any new arguments regarding the applicability of 10-year expected returns for the market from investment analysts?

A. Yes, he has. Mr. Eastman claims that the MRP in the CAPM is the <u>expected</u> return on the market less the risk-free rate, and that expected return could be estimated using the investment analysts' projections.

Q. Do you agree with Mr. Eastman?

A. No, I do not. Sometimes analysts interchange the terms "expected return" and "required return", and it is my opinion that this is the case in Mr. Eastman's example. As discussed in my Rebuttal Testimony,[29] expected returns are not equal to required returns, a fact in which Mr. Eastman agrees.[30]

Q. What are commonly accepted measures of the MRP for the CAPM?

A. The Chartered Financial Analyst ("CFA") Institute Research Foundation states:

> Approaches to estimating the ERP fall into three broad categories:
>
> 1. Methods based on a dividend discount model (DDM), earnings discount model, or cash-flow-to-the-investor

[28] Eastman Surrebuttal Testimony, at 5-6.
[29] D'Ascendis Rebuttal Testimony, at 46-47.
[30] Eastman Surrebuttal Testimony, at 6.

> discount model: forward-looking methods with their roots in discounted cash flow (DCF) analysis, wherein the value of an asset is regarded as the present value of the cash flows the asset is expected to generate.
>
> 2. Methods based on extrapolating past trends, in particular the spread between realized stock and bond or cash returns, into the future: retrospective methods.
>
> 3. Methods based on a macroeconomic model of the way that investors require compensation for risk.
>
> In past literature, these have been called, respectively, supply, equilibrium, and demand models.[footnote omitted] The DDM is a supply model because it focuses on ways that companies generate cash with which to reward investors. The macroeconomic model is a demand model because it asks what excess return investors need to induce them to take equity risk. The retrospective method can be regarded as an equilibrium model because it relies on prices at which the market actually traded, reflecting the intersection of supply and demand curves.[31]

None of the three commonly used ways to estimate the MRP involve reviewing investment analyst projections of returns on the market. In view of the above, expected returns published by investment analysts should not be considered a valid measure of the investor-required return on the market by the Commission.

C. <u>FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE</u>

Q. Has Mr. Eastman advanced any new arguments supporting his decision not to include a size adjustment in his analysis?

A. Yes, he has. Mr. Eastman provided additional academic literature in support of his position, and notes that (1) CUPA does not access capital in the same manner as the Utility Proxy Group, and (2) following my logic, all operating subsidiaries of

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[31] CFA Institute Research Foundation, Literature Review, *The Equity Risk Premium: A Contextual Literature Review*, at 2.

holding companies would be riskier than the holding companies, all else equal.[32]

Q. Please comment on the Kalesnik and Beck article cited by Mr. Eastman as support.

A. Similar to Mr. Keller's reference to the 2015 SBBI Yearbook, the Kalesnik and Beck article focuses on returns, not standard deviations of returns. For example, the authors state that if the delisting bias (*i.e.*, if returns on delisted stocks were included in decile returns) was eliminated, the size premium would disappear, but if one kept the delisted stocks in those deciles, the standard deviation of the decile returns would increase markedly. As discussed previously, risk (as measured by the standard deviation) is what drives investor-required return. As such, the Kalesnik and Beck article should not be considered by the Commission.

Q. Do you agree that CUPA accesses capital differently than the members of the utility proxy group?

A. Yes, I do. CUPA, and its Parent, CORIX Regulated Utilities, Inc. ("CRU") are not publicly traded, nor is their debt rated by major rating agencies. As such, CUPA and CRU are exposed to significant liquidity risk compared to the Utility Proxy Group, on account of their small size. This is another reason why a size premium needs to be applied to CUPA's ROE in this proceeding.

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[32] Eastman Surrebuttal Testimony, at 7-8.

Q. Mr. Eastman states that the logic behind your size premium is flawed because the subsidiaries in your proxy group raise capital as consolidated entities.[33] Please respond.

A. As discussed in my Direct Testimony,[34] the cost of capital in regulatory proceedings are set on a stand-alone basis, which means the ROE must reflect the risk of the investment, not the source of the funds. Simply put, the operating company's risk is measured, and that risk (and return) would be the same regardless of ownership structure.

Q. Is it your position that individual subsidiaries of utility holding companies are riskier than the combined holding company due to their smaller size, all else equal?

A. Yes. This position is consistent with portfolio theory, which theorizes that owning a basket of risky securities is less risky than individual owners owning separate securities. Utility holding companies invest in individual operating utilities, all at their assumed individual levels of risk. As the utility holding company diversifies its holdings over several geographic and regulatory territories, the overall riskiness of the portfolio decreases even if some of the underlying individual securities are riskier than the portfolio. But this does not imply that the individual utilities held by the holding company are less risky.

IV. CONCLUSION

Q. Does this conclude your Rejoinder Testimony?

A. Yes.

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[33] Eastman Surrebuttal Testimony, at 8.
[34] D'Ascendis Direct Testimony, at 41-42.

CUPA W&WW STATEMENT NO. 7-RJ

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REJOINDER TESTIMONY

OF

EMILY LONG

WATER & WASTEWATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Rebuttal Testimony of Emily Long (Water and Wastewater)

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A: My name is Emily Long. I am the State Operations Manager at Community Utilities of Pennsylvania Inc. ("CUPA" or "Company"). My business address is 570 Hallet Road, East Stroudsburg, PA 18301.

Q: **ARE YOU THE SAME EMILY LONG WHO PROVIDED THE REBUTTAL STATEMENT CUPA STATEMENT 7-R?**

A: Yes.

Q: **PLEASE SUMMARIZE THE PURPOSE OF YOUR REJOINDER TESTIMONY.**

A: The purpose of my rejoinder testimony is to respond to the outstanding recommendations of OCA's Terry Fought presented in OCA Statement 4SR. Mr. Fought Makes seven recommendations at the conclusion of his testimony beginning at page 14, and I will address his second through seventh recommendation below as within my job responsibilities.

Q: **PLEASE ADDRESS MR. FOUGHT'S SECOND RECOMMENDATION REGARDING ISOLATION VALVE RECORDS.**

A: In Mr. Fought's second recommendation, he suggests CUPA implement recordkeeping steps and repair schedules for isolation valves. Regarding isolation valves in the Tamiment system, CUPA located valves during 2021 and has scheduled a Tamiment valve exercise plan to occur in 2022 at which time data will be collected and inoperable

valves will be evaluated for repair or replacement. For Penn Estates and Westgate, CUPA has located and exercised all valves in 2020 as I previously testified with a 50% rotating exercise schedule for all years going forward. CUPA is willing to report the requested data during its next rate case. However, CUPA is not agreeable to provide a forward-looking schedule of upcoming repairs and replacements with its next rate case as the historic reports will show CUPA's replacement progress and creating such a comprehensive schedule would require CUPA to enlist various engineering services which would significantly increase costs with no benefit on the service or replacement program. Moreover, Mr. Fought has neither identified how much what he has in mind will cost and he has not proposed, nor has any other OCA witness, additional funds to cover those expenses or costs.

Q: **PLEASE ADDRESS MR. FOUGHT'S THIRD RECOMMENDATION REGARDING 6-MONTH REPORTING REQUIREMENTS FOR BWAS AND DO NOT CONSUME ADVISORIES UNTIL CUPA'S NEXT RATE CASE.**

A: As part of CUPA's rate case filings, the information is already reported and was supplied to the parties in the instant proceeding. CUPA does not believe it is a prudent use of resources to require a 6-month filing requirement as this information is already provided to parties during the rate case, and all drinking water non-compliance matters are communicated in CUPA's annual DEP reporting requirements. The DEP Consumer Confidence Reports ("CCRs") are public documents and readily found on CUPA's website accessible to the OCA on an annual basis.

Q: **PLEASE ADDRESS MR. FOUGHT'S FOURTH RECOMMENDATION REGARDING SUPPLEMENTAL TESTING AT TWO WELLS WITHIN THE TAMIMENT SYSTEM FOR TDS, SULFATES, AND HARDNESS.**

A: As I testified in my rebuttal testimony, the OCA's request that CUPA undertake testing and analysis of secondary standards including TDS, sulfates, and hardness encompass testing not required by the PADEP for safe drinking water. CUPA is currently assessing the costs of testing for these parameters at the OCA's referenced locations and if CUPA does proceed with testing for these parameters, CUPA is willing to supply the lab results and findings during its next rate case filing. Additionally, as I stated in rebuttal, Mr. Fought and the OCA have not proposed any adjustments that I have been made aware of as part of their adjustments to CUPA's request to date to cover the expense of the supplemental testing.

Q: **PLEASE ADDRESS MR. FOUGHT'S FIFTH RECOMMENDATION REGARDING THE PENN ESTATES WATER SYSTEM AND ENGINEERING REPORTS AND IMPLEMENTATION TO ADDRESS ADEQUATE SUPPLY.**

A: As part of my rebuttal and subsequently shared to the OCA through discovery, CUPA's engineer GHD has already completed the engineering analysis for the Penn Estates system in February 2021 which addressed each of Mr. Fought's requests. CUPA is willing to submit a schedule during its next rate case to show the implementation status and projections to address Mr. Fought's points 2-6 of his recommendation.

Q: **PLEASE ADDRESS MR. FOUGHT'S SIXTH RECOMMENDATION REGARDING THE PROVISION OF GRINDER PUMP INFORMATION TO CUSTOMERS.**

A: CUPA accepts Mr. Fought's recommendation. As I previously testified, CUPA is already relaying much of this information to affected customers through prior community meetings. CUPA will provide every new customer that has a grinder pump with information on the customer required operation and maintenance to ensure continued operation.

Q: **PLEASE ADDRESS MR. FOUGHT'S SEVENTH RECOMMENDATION REGARDING THE DEP CO&A FOR THE PENN ESTATES WASTEWATER SYSTEM.**

A: CUPA is willing to submit progress reports at the time it files its next rate case. As the PA DEP CO&A falls under the jurisdiction of the PA DEP, it would not be efficient for CUPA to submit ongoing progress reports to the parties, and the outcome of the CO&A and status can be provided during CUPA's next rate case.

Q: **DOES THIS CONCLUDE YOUR PREPARED REJOINDER TESTIMONY?**

A: Yes.

CUPA WW STATEMENT NO. 1

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

DIRECT TESTIMONY

OF

J. BRYCE MENDENHALL

WASTEWATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Direct Testimony of J. Bryce Mendenhall (Wastewater)

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A: My name is J. Bryce Mendenhall. I am the President of Community Utilities of Pennsylvania Inc. ("CUPA" or "Company"). My business address is 500 W. Monroe, Suite 3600, Chicago, Illinois 60661.

Q: **PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.**

A: As President I am responsible for all aspects of the Company's business culminating in the ongoing provision of safe drinking water and environmentally responsible wastewater service to all our customers.

Q: **PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.**

A: I have been employed with the Corix Group of Companies since March of 2017. I graduated from Appalachian State University in 1993 with a degree in Geographic Information Systems (GIS) and Cartography and have been employed in the water and wastewater profession for twenty-eight years collectively. I worked for more than a decade as the Utilities Director for Franklin County, North Carolina and most recently served four years as the Vice President of Operations for Carolina Water Service of NC, Blue Granite Water Company, and Tennessee Water Service.

Q: **HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?**

A: No. However, I have testified before other state commissions including North Carolina, South Carolina, and Tennessee on topics of operations, capital projects, unaccounted for water and customer service.

Q: **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A: My testimony: (1) introduces the other witnesses who will testify in support of our requested rate relief; (2) provides background on the history and structure of CUPA; (3) explains why the rate relief requested by CUPA is necessary and reasonable; (4) briefly discusses the Company's response to Covid-19 and (5) discusses other aspects of our rate request, including capital projects.

WITNESSES

Q: **WHO ARE THE OTHER WITNESSES PRESENTING TESTIMONY IN THIS PROCEEDING?**

A: In addition to myself, CUPA's request for rate relief is supported by the following witnesses:

- Perry Brown, CUPA's Financial Planning and Analysis Manager will present consumption decline/usage normalization, miscellaneous revenue adjustments, uncollectible accounts adjustments, weighted ERC calculation, forecasted salaries/wages, pension/other benefits and rate base valuation for assets of Pennsylvania Utility Company (Tamiment).

- David Clark, CUPA's financial analyst will present capital forecast, rate case expense, purchase power, chemicals, and maintenance.
- Andrew Dickson, Senior Financial Analyst will discuss rate design including the proposed low-income rate.
- Dylan D'Ascendis, Partner at Scott Madden Management Consultants will recommend a cost of common equity that the Company used in determining revenue requirements.
- Scott Miller, Partner at Baker Tilly Municipal Advisors will present a fully allocated cost of service study to show how the water and sewer revenue requirements are allocated to customer classes.

BACKGROUND

Q: **PLEASE DESCRIBE THE HISTORY OF COMMUNITY UTILITIES OF PENNSYLVANIA INC.**

A: CUPA is a Pennsylvania corporation and is a wholly owned subsidiary of Corix Regulated Utilities (US) Inc.[1], ("CRUI") formerly known as Utilities, Inc. ("UI"). CRUI is an Illinois corporation created and existing under the laws of the State of Illinois that owns more than 60 water and sewer utilities operating in 16 states, including CUPA. CRUI has been involved in the water and sewer industry for over 40 years and has approximately 300,000 customers. CRUI continues to provide CUPA necessary funding, and seasoned management through Water Service Corporation ("WSC") described below.

[1] Utilities, Inc changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

CUPA was incorporated in 2015 for implementation of the merger into a single entity of the three separate wholly owned Pennsylvania subsidiaries of UI that provided water and sewer services in Pennsylvania (the "constituent Pennsylvania utilities"). Those subsidiaries are Penn Estates Utilities, Inc. ("PEUI"), Utilities, Inc. of Pennsylvania ("UIP"), and Utilities, Inc. - Westgate ("UIW"). The merger was approved by the Commission's December 3, 2015 Order. Pursuant to the terms of the approved Agreement and Plan of Merger (the "Merger"), the constituent Pennsylvania utilities merged with and into CUPA, the surviving corporation. All the common stock of the constituent Pennsylvania utilities was cancelled and retired and ceased to exist, and the separate corporate existence of each of the absorbed Pennsylvania utilities ceased. By operation of law, from and after the effective time of the merger all the assets, rights, powers, duties, obligations, liabilities, and debts of the constituent Pennsylvania utilities transferred to and were assumed by CUPA. Under the approved Merger, the existing rates of each of the constituent Pennsylvania utilities remain in effect for the customers located in divisions of CUPA corresponding to the service areas formerly served by the constituent Pennsylvania utilities. As part of CUPA's 2016 rate case settlement at R-2016-2538660, the Commission approved reasonable steps towards unitization of rates between CUPA's water divisions as unitization is favored by the Commission. As part of CUPA's 2019 rate case settlements at R-2019-3008947 and R-2019-3008948, the Commission approved a full unitization of rates across CUPA's Water and Wastewater territories.

Additionally, the Pennsylvania Public Utility Commission in the matter of A-2018-3005430 issued a Certificate of Public Convenience on June 25, 2019 wherein CUPA

acquired water and wastewater assets owned by Pennsylvania Utility Company (Tamiment).

CUPA provides wastewater service to approximately 9,597 customers via (3) WWTP facilities and a complex network of collection mains and wastewater lift stations.

Q: **WHAT IS THE RELATIONSHIP BETWEEN CUPA AND CRUI AND HOW DOES THIS RELATIONSHIP BENEFIT THE COMPANY'S CUSTOMERS?**

A: As indicated, CUPA is a wholly owned subsidiary of CRUI. CRUI is unique in that for over 40 years its business has been owning and operating through WSC, smaller water and sewer companies. It is an advantage to CUPA to be part of an organization whose sole focus is on its type and size of operations. CRUI has the expertise needed in areas of importance to small water and sewer companies, such as in construction and engineering, accounting, data processing, billing and customer services, and regulation. Having its focus on its water and sewer businesses, CRUI has the knowledge and ability to meet current challenges facing the water and wastewater industry.

Q: **PLEASE DESCRIBE WSC?**

A: WSC, like CUPA, is a wholly owned subsidiary of CRUI. WSC is a Service Company organization that is familiar with the business and property of CUPA (and the other regulated operating companies within the Corix group of companies) and experienced in the conduct, management, financing, construction, accounting, and operation of CUPA's water and sewer service businesses. WSC provides necessary services pursuant to a contract (the "Affiliated Interest Agreement" of "AIA") originally approved by the Commission pursuant to Docket No. G-2015-2512603. Pursuant to the Commission's June

25, 2019 Orders at Docket Nos. A-2018-3005430 & A-2018-3005432 (water) and A-2018-3005431 & A-2018-3005433 (wastewater), CUPA filed on November 22, 2019 an updated Affiliated Interest Agreement (AIA) under Docket No. G-2019-3014555. CUPA received correspondence dated November 25, 2019 at the above referenced docket stating, "the period for consideration of the Agreement filed November 22, 2019 is extended until further order of the Commission". The Commission has not yet issued a decision regarding the updated AIA.

Q: **WHAT IS THE RELATIONSHIP BETWEEN WSC AND CUPA?**

A: Like any large public utility, CUPA requires business and corporate services to operate and serve customers. CUPA receives those services from and through WSC. Specifically, WSC employs or provides personnel and the necessary resources to perform the services for CUPA per the AIA.

Q: **WHAT TYPE OF SERVICES DOES WSC FURNISH TO CUPA?**

A: The services that WSC furnishes to CUPA generally fall into the same categories of services that all public utilities require to operate and serve customers, such as executive governance, financial, treasury, accounting, legal, health and safety, environmental compliance, procurement, customer service, billing, human resources, employee benefits, payroll, and information technology services. The services that WSC provides CUPA through WSC employees, Corix executive leadership and other Corix personnel supervised by the Corix Executive Leadership Team and outside contractors, comprise a complete suite of the administrative and general services that CUPA needs to fulfill its public utility obligation to continuously provide safe and reliable water and wastewater services to

Pennsylvania customers. If WSC did not furnish those services, CUPA would have to perform the services itself or procure from other service providers.

Q: **DO CUPA'S CUSTOMERS BENEFIT FROM THE COMPANY'S ARRANGEMENT WITH WSC?**

A: Yes. Specifically, in addition to the centralized expertise that the arrangement provides CUPA, CUPA's customers benefit from economies of scale and scope by CUPA's affiliation with a larger organization that can leverage the bargaining power of the entire Corix group of companies to achieve efficiencies that could not be achieved by a smaller company like CUPA on a stand-alone basis and that has better access to debt and equity capital markets than a smaller company. Further, the centralized delivery of common support services-the costs of which are shared among CUPA and other operating companies within the Corix family that benefit from the services-enables the services to be provided to CUPA and each operating company at a lower cost than if services were provided independently assuming replication of services on a smaller scale was possible.

RELIEF REQUESTED

Q: **ARE YOU FAMILIAR WITH THE TARIFF SUPPLEMENT AND SUPPORTING DOCUMENTATION CUPA FILED INITIATING THIS PROCEEDING?**

A: Yes. I have read them and am familiar with their contents.

Q: **PLEASE DESCRIBE THE CURRENT RATES AND CHARGES APPROVED FOR CUPA'S OPERATING DIVISIONS.**

A: The base rates and charges for CUPA's operating divisions were previously approved by the Commission's November 14, 2019 Order at Docket. No. R-2019-3008948.

Q: **PLEASE DESCRIBE THE RELIEF REQUESTED BY CUPA.**

A: CUPA is requesting an increase in base rates and charges to produce additional wastewater revenue of $ 998,705. The specific rates and charges proposed by CUPA are discussed in greater detail by Andrew Dickson.

Q: **WHY IS THE COMPANY REQUESTING RATE RELIEF AT THIS TIME?**

A: CUPA realizes that the Covid-19 pandemic has resulted in significant economic hardship for our customers. CUPA also recognizes the importance of water and wastewater utility services during a public health emergency and appreciates the obligations that come with delivering a resource required for life and for which our customers have no other source. However, under present rates, CUPA is not able to meet its operating costs and earn a reasonable return on its investment. To continue providing these essential utility services, CUPA must have rates that allow it to continue to provide safe, adequate, and reliable service. CUPA cannot defer capital investments, must continue to fairly compensate employees, and ensure it financial stability. Without appropriate rate relief, CUPA's ability to continue to provide environmentally safe, reliable, and efficient water and wastewater services to its customers and meet its financial obligations will be adversely affected. For the forecasted 12 months ended December 31, 2022, CUPA is projected to earn a 2.31% return on equity (ROE), which is far below the ROEs recommended by CUPA's cost of capital witness.

Q: **IS CUPA RECOMMENDING A CONSOLIDATED RATE STRUCTURE?**

A: Yes. In addition to the consolidation effort in the previous rate case, CUPA is proposing a consolidated rate structure to also include the most recently acquired Tamiment system.

Q: **ARE THERE BENEFITS ASSOCIATED WITH A CONSOLIDATED RATE STRUCTURE?**

A: Yes, consolidated rates are commonplace in other regulated utilities like gas and electric. Consolidated rates will allow CUPA to spread capital costs over a larger base of customers, which ultimately benefits all customers and can protect customers from rate shock. If a small standalone utility requires a significant capital improvement these costs can be spread over a larger base of customers. In the long-term, consolidated rates will strengthen CUPA and allow the customers to enjoy lower rates via fewer rate cases and lower rate case expense.

RESPONSE TO COVID-19 PANDEMIC

Q: **CAN YOU BRIEFLY ADDRESS WHAT ACTIONS THE COMPANY HAS TAKEN IN RESPONSE TO THE COVID-19 PANDEMIC**

A: Yes. One of our first steps was to set up an Incident Command Structure to ensure all decision making was centralized and to ensure the safety of our employees and the communities that we serve. Below is a list of several measures CUPA has taken to address the impact of COVID-19 on utility operations and our customers:

1) Voluntary suspension of disconnects including an extension through June 30, 2021
2) Voluntary reconnections for previously disconnected customers

3) Implementation of bill pay assistance and more flexible credit and collection practices.
4) Critical inventories planning and review
5) Workforce planning
6) Facility Emergency Action Plans
7) Suspension of all non-essential business travel – this suspension of business travel does not include regular, essential operational and field activities which can be performed using recommended social distancing measures.
8) Remote work and office closures – all company offices were closed to the public temporarily effective March 16th, 2020.
9) Cyber security precautions – company IT personnel have continued working to ensure employees are operating in a secure manner from home Wi-Fi networks through VPN access.
10) Essential Operations Continuity Planning
11) Emergency security clearances for employee access to plants and facilities where movement was otherwise restricted.
12) Health and Safety guidance policies for operations staff, including:
    i. Social distancing policy;
    ii. Updated PPE guidance;
    iii. Vehicle maintenance guide;
    iv. Multiple employee task; and
    v. Critical contractor/visitor guidance.
13) Essential personal protective equipment

14) Lone worker safety program

15) Vaccine coordinators – this team assisted with tracking each county/states vaccine program to facilitate staff access for vaccination.

CAPITAL PROJECTS

Q: **PLEASE DESCRIBE THE COMPANY'S CAPITAL INVESTMENT PLAN (CIP).**

A: The Company's CIP is a rolling five-year plan that is based on the existing and anticipated needs of each water and wastewater system. This plan includes two distinct groups of spending: (1) non-project asset additions/replacements which include (a) asset additions/replacements and (b) capitalized time for asset additions/replacements; (2) projects, which include (a) engineering, equipment, and construction costs, (b) capitalized time for project management and (c) interest during construction (IDC). The Company's internal guidelines require any capital investment cost which is greater than $50,000 or takes longer than 30 days to complete be treated as a project. Capital investments that do not meet these requirements are captured as non-project asset additions/replacements.

Q: **PLEASE DESCRIBE THE COMPANY'S CAPITAL INVESTMENT BUDGETING AND FORECASTING PROCESS FOR PROJECTS.**

A: The project investment needs of CUPA's water and wastewater systems are determined by a variety of initiating events and informative drivers and are intended to continually improve service levels, comply with permit requirements, prevent health and safety issues, prevent asset failures, improve operator efficiency, reduce operating costs, and occasionally, to increase system capacity. These forward-looking capital projects are refined into the CIP, through collaboration between Operations, Operations Management, and Finance in conjunction with utilizing the Company's Asset Management Plan

(AMP), which I describe in more detail below. Through utilizing the AMP, the Company can review existing asset conditions and their respective Consequences of Failure ("CoF") and mitigation strategies to help evaluate and prioritize projects to determine the appropriate timing for further development and cost estimation.

To establish engineering, equipment, and construction costs for projects in the CIP, the Company utilizes its best available information, which could include engineering estimates, contractor bids, and internally generated estimates.

The capitalized time component of the project is calculated by multiplying the forecasted quantity of capitalized hours by our hourly cap time rate for Pennsylvania. Capitalized hours generally include project management and additional operations demands during completion of the project.

The IDC component of the project is calculated by multiplying the IDC rate in Pennsylvania by the forecasted, monthly, outstanding project balance.

Q: **WHAT IS THE PROCESS FOR EVALUATING POTENTIAL CAPITAL PROJECTS?**

A: Potential projects are identified typically from review of the AMP, focusing on the highest risk assets. As explained below, other justifications are considered for potential projects beyond risk. After potential projects are identified, they are evaluated and prioritized on a system-by-system basis by a team consisting of Operations and Finance. Projects are evaluated and prioritized by using the following criteria, in order of importance: (1) health, safety, and environment, (2) level of service (3) end of life, (4) capacity, and (5) efficiency.

Q: **HOW ARE CAPITAL PROJECTS SCHEDULED?**

A: The highest priority projects, as identified in the AMP or by other means, are generally scheduled soonest. The projects are evaluated to determine expected length for study, design, permitting, and construction. The timing of projects is evaluated and adjusted to minimize scheduling issues and to ensure timing requirements and limitations are met. The Company reviews the recommendations of engineers regarding when work should be completed. Scheduling is also adjusted to account for the capacity of the Operations team to manage multiple ongoing projects.

Q: **WHAT IS THE COMPANY'S ASSET MANAGEMENT PLAN?**

A: The Company engaged GHD Group (GHD), a consulting engineering firm, to assist with development of the Company's AMP for Tamiment, Penn Estates and UIP respectively. In general, the AMPs were developed using the United States Environmental Protection Agency (USEPA) Asset Management Framework[2]. Corix has implemented asset management company-wide, with each unit of the Company developing plans specific to their operations. The asset management framework is built around a body of leading practices that focus on seeking the lowest total lifecycle cost of ownership for infrastructure assets, while delivering services at a level customers and stakeholders require, at an acceptable level of risk to the organization and stakeholders. The AMP is intended for use as a central, living document or set of documents that helps articulate to the Company and stakeholders how assets are managed. The Company is committed to an AMP that will continue to develop and improve.

[2] The USEPA Asset Management Framework documents are available online here: https://www.epa.gov/sustainable-water-infrastructure/asset-management-water-and-wastewater-utilities.

The Company has not yet developed a formal AMP for the Westgate water system. The Westgate water system is a purchased water system with few vertical assets. Replacements of the linear assets (water main) are generally replaced based on watermain break history or other service quality related issues.

Q: **HOW WILL THE COMPANY USE LUCITY TO MAINTAIN THE ASSET MANAGEMENT PLAN?**

A: The Company implemented the Lucity system in 2018. Lucity is an Operations Management System (OMS) that incorporates the Company's Geographic Information Systems (GIS) and Computer Maintenance Management Systems (CMMS).The Lucity system has several benefits including: (1) improved ability to access information and maintain information on assets, (2) improved customer service through real-time work orders and field activities, (3) improved line-of-sight on preventative maintenance, asset conditions, service levels and risk, and (4) better data to support decision-making through improved capital project identification, prioritization and justification.

Relevant to asset management, Lucity allows the Company to maintain the asset register in a master database. Company staff, including operators and managers, can update asset conditions and other attributes from inspections, preventive maintenance, or other activities. Company staff can retire, replace, and add assets as needed, which allow all assets to be properly accounted for and updated, leading to a more accurate AMP. Documentation for assets, such as specification sheets, plans, and manuals, can be stored electronically and made readily accessible. Lucity allows for assignment of work orders and other reminders to ensure that preventive maintenance, inspections, and other

activities are completed properly, on-time, and that a record is generated for any activities.

Q: **CAN YOU EXPLAIN THE COMPANY'S CONDITION ASSESSMENT OF GRAVITY SEWER MAINS?**

A: The Company assessed a majority of the gravity sewer mains using standard cleaning and televising methods. The Company completed cleaning and televising of 100% of the UIP and Penn Estates wastewater system in 2020 and plans similar assessments for Tamiment. All sewer mains were coded in accordance with Pipeline Assessment Certification Program (PACP) standards. The Company's consulting engineers reviewed the sewer televising data and prepared prioritization and cost estimates of repairs. The projects to implement these improvements are referred to as the Sewer Capital Improvement Plan (SCIP) for each sewer system.

Q: **WHAT IS THE PROPOSED LEVEL OF CAPITAL PROJECT INVESTMENT REFLECTED IN THIS RATE FILING?**

A: CUPA's rate increase reflects approximately $ 4,042,135 in total capital project expenditures in 2021 and 2022.

Q: **PLEASE DESCRIBE THE MAJOR PROJECTS PLANNED OR ONGOING WITHIN YOUR PENNSYLVANIA SYSTEMS WHICH ARE INCLUDED FOR RATE RECOVERY IN THIS FILING.**

A: The projects planned or ongoing within CUPA's systems included for rate recovery are described in the following sections. I will provide scope, justification, timing, costs, and status for the major projects. Projects are summarized in the table below:

Capital Project	TOTAL WASTEWATER
Tamiment Lakeside LS Rehab	$ 622,816
UIP Digester 2 Rehab	$ 127,850
PEIU Rehab Operations Study	$ 52,887
UIP Clarifier 1 Rehab	$ 250,513
Tamiment Railing and Grating	$ 162,551
Tamiment Lagoon Fencing	$ 72,760
Tamiment LS Generator	$ 124,448
PEUI COA Project	$ 204,533
UIP EQ2 Rehab	$ 190,137
UIP EQ1 Rehab	$ 145,993
PEUI Filter 4 Rehab	$ 197,859
TAM Train 1 Rehab	$ 279,005
TAM Train 5 Rehab	$ 279,005
PEUI I&I Project 2021	$ 334,420
Tamiment WWTP SCADA Integration	$ 187,807
UIP I&I Project 2022	$ 520,457
UIP Chestnut LS Conversion	$ 156,244

Q: **PLEASE DESCRIBE THE "TAMIMENT LAKESIDE LS REHAB" PROJECT.**

A: The Tamiment – Lakeside Lift Station Rehabilitation will reconfigure and upgrade a portion of the Tamiment wastewater system. The current configuration works by means of 'piggyback' routing to an additional downstream station. The new configuration will allow for the removal of the downstream station while allowing the new Lakeside LS to direct discharge into a gravity main. The AMP identified that the condition of the assets associated with the Lakeside Lift Station and Labar Lift Station ranged from 'Fair' to 'Very Poor'. Several of the assets were identified as having a 'High' Consequence of Failure. The Company plans to complete this project by the end of August 2022. PADEP received the Company's permit application January 2021 and are currently reviewing plans for the lift station replacement and new force main addition.

The Company currently forecasts a total project cost of $662,816, including $600,000 in direct costs for engineering and construction, $4,852 for capitalized time (cap time), and $17,964 for Interest During Construction (IDC).

Q: **PLEASE DESCRIBE THE "UIP DIGESTER 2 REHABILITATION" PROJECT.**

A: The UIP Digester Rehabilitation Project included rehabilitation of Digesters #2 and #3 at the UIP WWTP. Multiple support beams were attached to interior separating walls between the digesters and aeration chambers. The project was initiated on an emergency basis because the support beams for both digesters failed and required immediate repair. Additional project elements include replacing the splitter box and piping that direct flow to the digesters. These assets are identified as 'Poor' condition with 'Very High' Consequence of Failure. The project is expected to reach completion in September 2021 with the Company forecasting a total of project cost of $127,850, including $121,999 in direct costs for engineering and construction, $1,617 for cap time, and $4,234 for IDC.

Q: **PLEASE DESCRIBE THE "PEUI REHAB OPERATIONS STUDY" PROJECT.**

A: The project will identify the order of operations and potential projects necessary to conduct rehabilitation efforts outlined in tank inspection reports and identified in the AMP. This study provides a comprehensive plan to extend asset life in a cost-effective manner. A series of WWTP inspections were conducted in 2019 and 2020 which identified several required rehabilitation/replacement efforts required to maintain compliant plant operations. This study will develop best options and potential projects that are feasible to make rehabilitation efforts possible in a cost-effective manner while maintaining compliance. The Company currently forecasts a total of project cost of $52,887, including $50,000 in direct costs for engineering, $1,617 for cap time, and $1,270 for IDC.

Q: **PLEASE DESCRIBE THE "UIP CLARIFER 1 REHAB" PROJECT.**

A: The clarifier structure in Reactor 1 is failing which presents great risk to the safety of operators and damage to the rest of the reactor structure. Continuing failure of the asset risks compliance issues as the effluent could be affected. The project will replace the clarifier structure in Reactor 1 with Evoqua supplying the fabricated equipment. Equipment replaced will consist of the central shaft, core structure, upper and lower sweep arms, trough, and associated bearings/components. To minimize construction timeframes and plant disturbance, new equipment will be pre-treated/coated off-site to the greatest extent possible to expedite installation.

The Company currently forecasts a total of project cost of $250,513, including $240,000 in direct costs for engineering and construction, $4,852 for cap time, and $5,662 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT RAILING AND GRATING" PROJECT.**

A: The railings around the WWTP presented significant safety concerns for our operators due to metal deterioration and restricted ingress/egress mobility. Staff found several gratings over the tanks that were not secure and therefore not accessible. The project replaced the gratings and railings spanning five treatment trains and two EQ tanks. Railings consist of 1.5" aluminum with galvanized serrated gratings and required kick plates. The project is forecasted to be complete June 2021.

The Company forecasts a total project cost of $162,551, including $155,000 in direct costs for engineering and construction, $1,617 for cap time, and $5,934 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT LAGOON FENCING" PROJECT.**

A: This project provides a permanent fence around the lagoon system which supplies the waste discharge irrigation system. Construction fencing was installed as a temporary measure,

but a permanent solution is needed to protect the area from unsolicited entry. Permanent fencing will secure assets within the lagoon and pump house footprint while providing safety for both residents and wildlife. A total of 1,100 LF of 8' fencing will be installed to include a man gate and vehicle gate. The project is expected to close in July 2021.

The Company currently forecasts a total of project cost of $72,760, including $70,000 in direct costs for engineering and construction, $1,617 for cap time, and $1,143 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT LS GENERATOR" PROJECT.**

A: Currently the Tamiment lift station does not have the operational reliability of 'back up' power during power outages caused by unforeseen circumstances or natural events. The project will install a generator and ATS (Automatic Transfer Switch) to mitigate the potential for sanitary sewer overflows during these occurrences. The project is expected to reach completion in October 2021.

The Company currently forecasts a total of project cost of $124,448, including $120,000 in direct costs for engineering and construction, $1,617 for cap time, and $2,831 for IDC.

Q: **PLEASE DESCRIBE THE "PEUI COA" PROJECT.**

A: PEUI entered a Consent Order Agreement ("COA") with PADEP in Q4 2020 to address violations that included sanitary sewer overflows and WWTP discharge limit violations. The project will address several COA items identified within the WWTP via enhanced control and performance which will aid in overall compliance. Specifically, the installation of a new splitter box on Plant 1 to stabilize flow to the digesters/clarifiers during high flow events thereby controlling tank levels. New chemical feed pumps with accompanying flow control and monitoring equipment will also be installed. Project completion is expected in June 2021.

The Company currently forecasts a total of project cost of $204,533, including $195,000 in direct costs for engineering and construction, $4,852 for cap time, and $4,682 for IDC.

Q: **PLEASE DESCRIBE THE "UIP EQ2 REHABILITATION" PROJECT.**

A: The project will address the conditions found in the Dixon Engineering inspections conducted in 2020. The tank was given a "Poor" condition rating overall with blasting and recoating recommended along with repairs to metal work in the tank. Ensuring the tank is operating per design standards and in good working condition is necessary to prolong the life of the asset and ensure safe conditions for the operators. The project's expected completion is September 2022.

The Company currently forecasts a total of project cost of $190,137, including $185,000 in direct costs for engineering and construction, $1,617 for cap time, and $3,520 for IDC.

Q: **PLEASE DESCRIBE THE "UIP EQ1 REHAB" PROJECT.**

A: The project will address the conditions found in the Dixon Engineering inspections conducted in 2020. The tank was given a "Poor" condition rating overall with blasting and recoating recommended along with repairs to metal work in the tank. Ensuring the tank is operating per design standards and in good working condition is necessary to prolong the life of the asset and ensure safe conditions for the operators. The project's expected completion is October 2022.

The Company currently forecasts a total of project cost of $145,993, including $140,000 in direct costs for engineering and construction, $3,234 for cap time, and $2,758 for IDC.

Q: **PLEASE DESCRIBE THE "PEUI FILTER 4 REHABILITATION" PROJECT.**

A: The project will address conditions found in Dixon Engineering inspections conducted in 2020. The tank was given an overall "Poor" condition rating with blasting and recoating recommended along with repairs to metal work in the tank. Media replacement will coincide with the completion of interior rehabilitation efforts along with control replacement for operational efficiencies. This project is step one in an overall goal to replace three additional filters to maintain compliance and effluent quality. The project's expected completion is November 2022.

The Company currently forecasts a total of project cost of $197,859, including $190,000 in direct costs for engineering and construction, $1,617 for cap time, and $6,242 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT TRAIN 1 REHAB" PROJECT.**

A: The project will address the condition assessments generated by Dixon Engineering during 2020 inspections. The components of Train 1 which include an aeration tank, anoxic tank, and clarifier were given a "Poor" condition rating with recommendations for blasting/recoating and metal rehabilitation for the tank interior. The project will extend asset life while enhancing compliance and safety features. The project's expected completion is September 2022.

The Company currently forecasts a total of project cost of $279,005, including $270,000 in direct costs for engineering and construction, $3,234 for cap time, and $5,770 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT TRAIN 5 REHABILITATION" PROJECT.**

A: The project will address the condition assessments generated by Dixon Engineering during 2020 inspections. The components of Train 5 which include an aeration tank, anoxic tank, and clarifier were given a "Poor" condition rating with recommendations for

blasting/recoating and metal rehabilitation for the tank interior. The project will extend asset life while enhancing compliance and safety features. The project's expected completion is September 2022.

The Company currently forecasts a total of project cost of $279,005, including $270,000 in direct costs for engineering and construction, $3,234 for cap time, and $5,770 for IDC.

Q: **PLEASE DESCRIBE THE "PEUI SEWER CAPITAL IMPROVEMENT 2021" PROJECT.**

A: The project will target Level 5 defects in the collection system that were identified through the Company's asset management plan and a 2020 clean and televise project. Company engineering representatives will assist in prioritizing the defects and create individual specifications for point repairs and other rehabilitation sites. The project is expected to have a significant impact on structural deficiencies within the collection system that are contributors to inflow and infiltration ("I&I") which have direct impact on capacity and treatment efficiencies at the WWTP. Improving the condition of the collection system reduces strain on the treatment process, mitigates risk for overflow events, and improves integrity of service for the customers. The project was initiated in May 2021 and is planned for completion by October 2021.

The Company currently forecasts a total of project cost of $334,420, including $325,000 in direct costs for engineering and construction, $1,617 for cap time, and $7,803 for IDC.

Q: **PLEASE DESCRIBE THE "TAMIMENT WWTP SCADA INTEGRATION" PROJECT.**

A: The project will provide SCADA integration for the WWTP at Tamiment including three lift stations that will be connected via cellular modem to the primary site. The Company

is working to standardize SCADA systems in Pennsylvania to enhance operational control and reporting for the facilities. Work is also being conducted in conjunction with cyber-security and connectivity efforts of the company. The project includes implementation of the VTSCADA interface software, interactive Win 911 call-out, and daily/monthly pre-configured operational reporting abilities. SCADA integration enhances plant operations through real-time monitoring of alarms including integrated level sensors and flow monitoring. Standardizing SCADA within the company technology strategy allows for greater support and visibility throughout the organization coupled with operational efficiencies. The project is expected to conclude in November 2022.

The Company currently forecasts a total of project cost of $187,807, including $180,000 in direct costs for engineering and construction, $3,234 for cap time, and $4,573 for IDC.

Q: **PLEASE DESCRIBE THE "UIP SEWER CAPITAL IMPROVEMENT 2022" PROJECT.**

A: The project will target Level 5 defects in the collection system that were identified through the Company's asset management plan and a 2020 clean and televise project. Company engineering representatives will assist in prioritizing the defects and create individual specifications for point repairs and other rehabilitation sites. The project is expected to have a significant impact on structural deficiencies within the collection system that are contributors to inflow and infiltration (I&I) which have direct impact on capacity and treatment efficiencies at the WWTP. Improving the condition of the collection system reduces strain on the treatment process, mitigates risk for overflow events, and improves integrity of service for the customers. The project was initiated in May 2021 and is planned for completion by October 2021.

The Company currently forecasts a total of project cost of $520,457, including $500,000 in direct costs for engineering and construction, $4,852 for cap time, and $15,605 for IDC.

Q: **PLEASE DESCRIBE THE "UIP CHESTNUT LS CONVERSION" PROJECT.**

A: The project will convert the "dry can" pump pit at the Chestnut Lane Lift Station to a wet well design. "Dry can" pits pose a confined space hazard for operations and maintenance contractors. The project will include new submersible pumps, hatchway fall protection, and new control panel. The project is expected to conclude in November 2022.

The Company currently forecasts a total of project cost of $156,244, including $150,000 in direct costs for engineering and construction, $1,617 for cap time, and $4,627 for IDC.

Q: **DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?**

A: Yes, however I reserve the right to supplement or make corrections to this testimony.

CUPA W STATEMENT NO. 2
June 11, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

DIRECT TESTIMONY

OF

PERRY BROWN

REVENUES, EXPENSES, RATE BASE AND TEST YEAR(S) WASTEWATER

SPONSORING CUPA EXHIBIT NOS. PB-1 AND PB-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025207

Direct Testimony of Perry Brown

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME OCCUPATION AND BUSINESS ADDRESS.

A: My name is Perry Brown. I am a Financial Planning & Analysis Manager for Corix Regulated Utilities U.S., Inc. ("CRUUS") and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of CRUUS. My business address is 500 W, Monroe Ste 3600, Chicago, IL 60661

Q: PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

A: As the Financial Planning & Analysis Manager I am responsible for all aspects of the daily management of the business unit's accounting and finance operations, as well as reporting monthly and quarterly regional consolidated results. I develop and prepare CUPA's annual budget, monthly forecasts, and regulatory model along with all its sister companies in Maryland, New Jersey, and Virginia. My duties include the management of the regulatory accounting process, which involves directing, planning, managing and organizing regulatory filings for CUPA and its sister companies in the states listed previously.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A: I graduated from Northwood University in Midland, Michigan in 2013 with a Bachelor of Business Administration with a major concentration in Accounting and a minor

concentration in Finance. In 2020, I graduated with a Master of Business Administration with a Finance concentration. I joined CRRUS in January of 2014 as a Corporate Accountant and subsequently transitioned into a regulatory finance role in March of 2016.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?

A: Yes, I have. I submitted testimony in CUPA's previous rate cases at Docket Nos. R-2019-3008947 and R-2019-3008948.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: My testimony will provide an overview of the components listed below which are included in determining the $998,705 of additional revenues requested by CUPA in the rates specified in its tariff supplement increasing rates. I will provide insight as to how CUPA's forecasted test year income statement were developed for these components.

- Miscellaneous Revenue
- Uncollectible Expense (Bad Debt)
- Salaries & Wages
- Pension & Other Employee Benefits
- Contractual Services - Other
- Weighted ERC Calculation
- Filing Corrections
- Tamiment Rate Base Valuation

I will sponsor CUPA WW Exhibit No. PB-1 which contains all the workpapers referenced in my testimony. I will also sponsor CUPA WW Exhibit No. PB-2 which contains support for the Tamiment rate base determination.

TEST YEAR

Q: WHAT TEST YEAR IS THE COMPANY PROPOSING?

A: CUPA has prepared all of the attachments and schedules using a fully projected future test year ("FPFTY") ended December 31, 2022. CUPA's schedules also include a "per books base period" for the fiscal year ("FTY") ended December 31, 2020 and a forecasted period for the FTY ended December 31, 2021.

Q: DOES CUPA HAVE ANY CORRECTIONS TO ITS ORIGINAL FILING?

A: Yes, as the Company has discovered a handful of inadvertent errors that would have resulted in a material change in the Company's request for rate relief. The Company excluded the amortization of deferred costs related to COVID-19 in the FPFTY ending December 31, 2022. The Company miscalculated the pro forma billing units as the Company converted the quarterly billings to monthly. Lastly, CUPA misallocated the salary expense for a regional finance employee using a Leadership allocation rate instead of the correct Regional allocation rate of 37.78% the impact of this misallocation would increase operating expenses $11,583 for the FTY and $11,844 for the FPFTY respectively. CUPA currently receives a regional allocation percentage of this employee's salary.

Q: IS THE COMPANY CHANGING ITS REVENUE INCREASE OF $998,705?

A: No.

NET INCOME CHANGES

IN ALL INSTANCES BELOW THE TERM "CHANGE" REPRESENTS THE DIFFERENCE BETWEEN TWO PERIODS BEING COMPARED.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO MISCELLANEOUS REVENUES.

A: Forecasted levels of miscellaneous revenues reflect a normalized level of revenue using a 3-year historical average using billing data from 2017 through 2019. In the historical test year ending December 31, 2020 the Company refund customer for the late payment charges that were assessed incorrectly due to an internal billing issue. Also, included in the test year were reclassification of miscellaneous revenue related to late payment charges. Pursuant to the Commission's COVID-19 related Termination Moratorium Orders at Docket No. M-2020-3019244 and the Secretarial Letter at Docket No. M-2020-3019775. CUPA deferred foregone late payment charges due to the economic impacts stemming from COVID-19. The level of miscellaneous revenue included for recovery reflects a normalized level that removes the additional charges due to the billing system errors and the reclassification of forgone late payment charges.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO UNCOLLECTIBLE ACCOUNTS.

A: Uncollectible accounts are recalculated based on a percentage of uncollectible amounts to service revenues for a three-year average period from 2017-2019. The fiscal period 2020 was excluded from the development of the normalized percentage because CUPA

experienced a higher level of uncollectible accounts largely attributed to the economic impacts of the global pandemic. This percentage calculated was applied to forecasted service revenues. The uncollectible rate for CUPA was .73%.

Q: PLEASE DETAIL THE FORECASTED WEIGHTED ERC CALCULATION FROM EACH OVERHEAD COST CENTER.

A: Forecasted costs are allocated based on updated December 31, 2020 ERC counts and are shown in WP-PB-01 (ERC Allocations).

Water Service Corp. ("WSC") - Costs which are allocated from WSC, also referred to as "Shared Services" costs, are allocated by multiplying forecasted Shared Services costs by the ERC ratio of the specific CUPA territory over the total of all companies who receive the same services from the Shared Service organization. Westgate is allocated at 0.33% of WSC's forecasted costs. Penn Estates is allocated at 1.17% of WSC's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 0.54% of WSC's forecasted costs. Tamiment is allocated at 0.37% of WSC's forecasted costs.

Leadership – Costs which are allocated from CUPA's Leadership/President cost center are allocated by multiplying the forecasted leadership cost center costs by the ERC ratio of the specific CUPA territory over the total of all of the leadership cost center's service territories. The other territories include operations in; IL, IN, KY, MD, NJ and VA. Westgate is allocated at 1.92% of the Leadership's forecasted costs. Penn Estates is allocated at 6.73% of the Leadership's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 3.10% of Leadership's forecasted costs. Tamiment is allocated at 2.15% of Leadership's forecasted costs.

North Region SVP – Costs which are allocated from CUPA's Senior Vice President cost center are allocated by multiplying the forecasted SVP cost center costs by the ratio of the specific CUPA territory over the total of all of the SVP cost center's service territories. The other territories include operations in; IL, IN, KY, OH, MD, NJ and VA. Westgate is allocated at 1.36% of the SVP's forecasted costs. Penn Estates is allocated at 4.76% of the SVP's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 2.19% of SVP's forecasted costs. Tamiment is allocated at 1.52% of the SVP's forecasted costs. The ratio is developed by using CUPA's weighted proportion of plant in service, revenue, and headcount compared to the same components of all systems in the states listed above.

Mid-Atlantic - Costs which are allocated from CUPA's Mid-Atlantic Regional cost center are allocated by multiplying the forecasted Mid-Atlantic regional cost center costs by the ERC ratio of the specific CUPA territory over the total of all of the Mid-Atlantic regional cost center's service territories. The other territories include operations in MD, NJ, and VA. Westgate is allocated at 5.23% of the Mid-Atlantic's forecasted costs. Penn Estates is allocated at 18.28% of the Mid-Atlantic's forecasted costs. Utilities Inc, of Pennsylvania is allocated at 8.41% of Mid-Atlantic's forecasted costs. Tamiment is allocated at 5.85% of Mid-Atlantic's forecasted costs.

State – Costs which are allocated from CUPA's State cost center are allocated by multiplying the forecasted state cost center costs by the ERC ratio of the specific CUPA territory over the total of all of the CUPA's territories. Westgate is allocated at 13.84% of the State's forecasted costs. Penn Estates is allocated at 48.40% of the State's forecasted costs. Utilities Inc. of Pennsylvania is allocated at 22.27% of State's forecasted costs. Tamiment is allocated 15.49% of the State's forecasted costs.

Q: PLEASE EXPLAIN HOW FORECASTED SALARIES AND WAGES WERE DETERMINED.

A: Salaries and wages are calculated by employee and are based upon current and anticipated levels of staffing. Salaries are calculated by averaging from a past period of the percentage of increase for labor. A 4% wage level increase is standard across all MidAtlantic operating companies in CRRUS. Deviations from the standard 4% pay increases are awarded based on merit, promotions, certifications, and manager discretion. This wage increase is standard across all operating companies at CRRUS because the Company believes that by granting an annual 4% increase to wage levels, the Company is able to retain key and highly trained personnel who are in demand by other water and sewer operations, both privately and municipally. Additional detail and underlying calculations are provided in WP-PB-02 (Salaries and Wages Expense). As shown in Section 1, Page 12 of CUPA WW Exhibit No. DC-1, total salaries and wages expense is forecasted to increase from $451,679 in the base period to $469,108 in the FPFTY.

Capitalized Time is forecasted for based on anticipated capital investments from Operations. Additional detail and underlying calculations are provided in PB-02 (Salaries and Wages Expense). Capitalized time or cap time is calculated based on the following components:

Capital Project Cap Time - Operations has supplied a forecasted number of hours to be worked on each forecasted capital project. The unit of hours is multiplied against current PA operator cap time rates to determine capitalized time.

Capital Additions/Replacements Cap Time - FY 2022 forecast is based on a historical 8-year average (2013-2020) of capitalized time for generic plant additions/replacements.

Q: PLEASE EXPLAIN HOW PENSION AND OTHER BENEFITS COSTS WERE DETERMINED.

A: Pension and benefits costs are based on review and analysis of current and projected headcounts and corresponding benefits. Additional detail and underlying calculations are provided in WP-PB-03 (Pension and Benefit Expense). As shown in Section 1, Page 12 of CUPAWW Exhibit No. DC-1, pension and other benefits costs are forecasted to increase from $90,201 in the base period to $132,598 in the FPFTY. The increase in costs is driven by the level of health insurance claims. Health insurance costs are projected to increase 5%-8% annually.

Q: PLEASE EXPLAIN HOW FORECASTED CONTRACTUAL SERVICES-OTHER COSTS WERE DETERMINED.

A: Forecasts for Contractual Services – Other Costs are based on analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-PB-05 (Contractual Services - Other). As shown in Section 1, Page 12 of CUPA WW Exhibit No. DC-1, contractual services – other costs are forecasted to decrease from $431,623 in the base period to $322,435 in the FPFTY.

Q: PLEASE DESCRIBE THE NATURE OF THE COSTS INCLUDED IN CONTRACTUAL SERVICES-OTHER.

A: The Company has included all costs allocated from CUPA's service company WSC along with additional costs for outside services not related to accounting or legal services. CUPA has always received costs allocation from WSC however these costs have historically been itemized based on NARUC accounting. Going forward all allocated overhead service costs

from WSC will be presented as one. All costs allocated through Contractual Services-Others fall within the framework of CUPA's current affiliate interest agreements. These costs are allocated to CUPA from WSC using CUPA's ERC which is allowable under the terms of the approved agreement.

Q: PLEASE EXPLAIN THE DECREASE IN CONTRACTUAL SERVICE_OTHER FROM THE HTY TO THE FPFTY.

A: CUPA's parent company, Corix Infrastructures, had a previous structure that included two shared services groups one being WSC which provided services to only the United States subsidiaries under the Corix umbrella. The second shared services group provided services to Corix's Canadian subsidiaries. Corix has transitioned to merge the two groups into one shared services group that provides Accounting, Legal, Human Resources, ITC, and HSE services to all Corix Subsidiaries. This has resulted in previous costs incurred at WSC being spread across a larger base of subsidiaries. While shared service costs have increased, CUPA now receives less allocation of costs as its customer base represents a lower ratio than it has historically.

Q: IN YOUR OPINION DO THESE PROJECTIONS OR FORECASTS BEST REPRESENT CUPA'S EXPECTED FINANCIAL PERFORMANCE?

A: Yes, they do.

Q: IN YOUR OPINION ARE THESE PROJECTIONS REASONABLE AND RELIABLE?

A: Yes, they are. The projections are reasonable and are justifiable. Additionally, CUPA's work papers for planned projects and forecasts enable the other parties and the Commission to both test and recognize their appropriateness and reasonableness.

TAMIMENT RATE BASE

Q: PLEASE EXPLAIN THE RATE BASE VALUE FOR THE TAMIMENT WASTEWATER ASSETS.

A: Tamiment recorded a rate base value of $1,683,056 for its wastewater assets. Include in the rate base value was a plant balance of $2,861,017, accumulated depreciation balance of $1,617,881, and a CWIP balance of $439,920 at the time of the acquisition. CUPA also prepared separate schedules to support the Tamiment Rate Base Determination. See CUPA WW Exhibit No. PAB-2.

Q: PLEASE EXPLAIN HOW THE COMPANY DETERMINED THE RATE BASE VALUE.

A: CUPA included the book value of the assets and associated depreciation based on a fixed asset schedule provided by Pennsylvania Utility Company at the time the acquisition was recorded.

Q: PLEASE EXPLAIN WHY CUPA IS SEEKING TO ESTABLISH THE TAMIMENT RATE BASE VALUE IN THIS PROCEEDING.

A: Pursuant to the Commission's order at Docket Nos. A-2018-3005430, A-2018-3005431, A-2018-3005432 and A-2018-3005433, CUPA was ordered to file a base rate case to

determine the final rate base value of the acquired assets of Pennsylvania Utility Company (Tamiment). The original Order required CUPA to file within 18 months of closing, or February 28, 2021. CUPA subsequently sought a 6-week extension of this deadline at P-2020-3023277 and P-2020-3023281 which was granted allowing it to file a base rate case on or before April 12, 2021 which would establish the final rate base value for these assets

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes, it does.

CUPA WW Exhibit PAB-1

ERC Allocation Weights

Co	Territory	Water	Sewer	Total ERC Count	Water - Co	Sewer - Co	State	Mid-Atlantic	Leadership	WSC	SVP
315	Westgate	995	-	995			13.84%	5.23%	1.92%	0.33%	1.36%
316	UIP	-	1,601	1,601			22.27%	8.41%	3.10%	0.54%	2.19%
317	Penn Estates	1,740	1,739	3,479			48.40%	18.28%	6.73%	1.17%	4.76%
319	Tamiment	556	557	1,113			15.49%	5.85%	2.15%	0.37%	1.52%
CUPA	**State**	**3,291**	**3,897**	**7,188**	**45.79%**	**54.21%**	**100.00%**	**37.78%**	**13.90%**	**2.41%**	**9.83%**
	MD			4,627				24.32%	8.95%	1.55%	
	NJ			1,079				5.67%	2.09%	0.36%	
	VA			6,133				32.23%	11.86%	2.06%	
	Mid-Atlantic			**19,027**				**100.00%**	**36.81%**	**6.39%**	
	IL			16,394					31.71%	5.50%	
	IN			8,450					16.35%	2.84%	
	KY			7,824					15.14%	2.63%	
	Leadership			**51,694**					**100.00%**	**17.35%**	
	SC			31,268						10.50%	
	NV			24,704						8.29%	
	AZ			10,094						3.39%	
	FL			64,743						21.73%	
	LA			31,879						10.70%	
	GA			16,971						5.70%	
	TN			312						0.10%	
	NC			57,023						19.14%	
	al			2,264						0.76%	
	TX			6,966						2.34%	
	WSC			**297,918**						**100.00%**	

	(A)	(B)	(C)	(D)
	Source Tab - Payroll & Benefits - 2021	Source Tab - Cap Time	Rounding	Wastewater Total 12/31/2021
CUPA Forecast	**$ 493,028**	**$ (48,876)**	**$ -**	**$ 444,152**

Notes/Source:
(A) Payroll & Benefits - 2021 Tab
(B) Cap Time 2021 Tab
(C) Rounding
(D) = (A) + (B) + (C)

	(A)	(B)	(C)	(D)
	Source Tab - Pro Forma GL Cap Time Additions	Source Tab - Capital Projects PA	Rounding	Wastewater Total 12/31/2021
CUPA Forecast	**$ 28,025**	**$ 20,850**	**$ -**	**$ 48,876**

Description of calculations:
Operating Expense charged to plant is forecasted based on historical cap time trends and projected project cap time needs
Tab, "Pro Forma GL Cap Time Additions" is cap time forecasted for generic asset replacement/additions
The forecasted amounts are based on a eight-year historical average, found in columns B-E
Tab, "Capital Projects PA" shows forecasted cap time by forecasted project, number of projected hours are multiplied by cap time rates for PA personnel

Notes/Source:
(A) Captime Tab
(B) Captime Tab
(C) Rounding
(D) = (A) + (B) + (C)

	(A)	(B)	(C)	(D)
	Source Tab - Payroll & Benefits - 2022	Source Tab - Cap Time	Rounding	Wastewater Total 12/31/2022
CUPA Forecast	**$ 515,625**	**$ (46,517)**	**$ -**	**$ 469,108**

Notes/Source:
(A) Payroll & Benefits - 2022 Tab
(B) Cap Time 2022 Tab
(C) Rounding
(D) = (A) + (B) + (C)

	(A)	(B)	(C)	(D)
	Source Tab - Pro Forma GL Cap Time Additions	**Source Tab - Capital Projects PA**	**Rounding**	**Wastewater Total 12/31/2022**
CUPA Forecast	**$ 29,229**	**$ 17,288**	**$ -**	**$ 46,517**

Description of calculations:
Operating Expense charged to plant is forecasted based on historical cap time trends and projected project cap time needs
Tab, "Pro Forma GL Cap Time Additions" is cap time forecasted for generic asset replacement/additions
The forecasted amounts are based on a eight-year historical average, found in columns B-E
Tab, "Capital Projects PA" shows forecasted cap time by forecasted project, number of projected hours are multiplied by cap time rates for PA personnel

Notes/Source:
(A) Captime Tab
(B) Captime Tab
(C) Rounding
(D) = (A) + (B) + (C)

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2021	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**161,854**	**164,949**	**9.83%**	**68,177**	**37.78%**	**92,061**	**$ -**	**$ 228,930**	**45.79%**	**104,821**	**54.21%**	**124,110**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2021 Tab
(C) Payroll & Benefits - 2021 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2021 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2021 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2022	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**172,110**	**176,622**	**9.83%**	**72,110**	**37.78%**	**97,809**	**$ -**	**$ 244,588**	**45.79%**	**111,990**	**54.21%**	**132,598**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2022 Tab
(C) Payroll & Benefits - 2022 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2022 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2022 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

Community Utilities of Pennsylvania, Inc.
Payroll Tax Expense

WP-PB-04 (Payroll Tax)
Payroll Tax Expense Forecast

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2021	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**52,815**	**45,797**	**9.83%**	**25,864**	**37.78%**	**33,307**	**$ -**	**$ 68,265**	**45.79%**	**31,257**	**54.21%**	**37,008**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2021 Tab
(C) Payroll & Benefits - 2021 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2021 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2021 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

Community Utilities of Pennsylvania, Inc.
Payroll Tax Expense

WP-PB-04 (Payroll Tax)
Payroll Tax Expense Forecast

Territory	(A) Leadership ERC Allocation Weight	(B) Source Tab - Payroll & Benefits - 2021	(C) Source Tab - Payroll & Benefits - 2021	(D) North ERC Allocation Weight	(E) Source Tab - Payroll & Benefits - 2021	(F) Mid-Atlantic ERC Allocation Weight	(G) Source Tab - Payroll & Benefits - 2021	(H) Rounding	(I) Total 12/31/2022	(J) Water ERC Allocation Weight	(K) Total Water	(L) Wastewater ERC Allocation Weight	(M) Total Wastewater
CUPA Forecast	**13.90%**	**52,815**	**47,954**	**9.83%**	**26,233**	**37.78%**	**34,264**	**$ -**	**$ 70,819**	**45.79%**	**32,426**	**54.21%**	**38,393**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - Leadership
(B) Payroll & Benefits - 2022 Tab
(C) Payroll & Benefits - 2022 Tab
(D) WP-PB-01 (ERC Allocations) - North
(E) Payroll & Benefits - 2022 Tab
(F) WP-PB-01 (ERC Allocations) - Mid-Atlantic
(G) Payroll & Benefits - 2022 Tab
(H) Rounding
(I) = (A) * (B) + (C) + (D)*(E) + (F) * (G) + (H)
(J) WP-PB-01 (ERC Allocations) - Water Co.
(K) = (I) * (J)
(L) WP-PB-01 (ERC Allocations) - Wastewater Co.
(M) = (I) * (L)

	(A) WSC ERC Allocation Weight	(B) Source Tab - Corp Cost 2021	(C) Source Tabs - 858, 315, 316, 317, & 319	(D) Rounding	(E) Total 12/31/2021	(F) Water ERC Allocation Weight	(G) Total Water	(H) Wastewater ERC Allocation Weight	(I) Total Wastewater
CUPA Forecast	2.41%	23,646,973	29,401	$ -	$ 599,911	45.79%	274,682	54.21%	325,229

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - WSC
(B) Corp Cost 2021 Tab
(C) Tabs 858, 315, 316, 317 & 319
(D) Rounding
(E) = (A) - (B) + (C) + (D)
(F) WP-PB-01 (ERC Allocations) - Water Co.
(G) = (E) * (F)
(H) WP-PB-01 (ERC Allocations) - Wastewater Co.
(I) = (E) * (H)

	(A) WSC ERC Allocation Weight	(B) Source Tab - Corp Cost 2022	(C) Source Tabs - 858, 315, 316, 317, & 319	(D) Rounding	(E) Total 12/31/2022	(F) Water ERC Allocation Weight	(G) Total Water	(H) Wastewater ERC Allocation Weight	(I) Total Wastewater
CUPA Forecast	**2.41%**	**24,529,145**	**2,965**	**$ -**	**$ 594,759**	**45.79%**	**272,323**	**54.21%**	**322,435**

Notes/Source:
(A) WP-PB-01 (ERC Allocations) - WSC
(B) Corp Cost 2022 Tab
(C) Tabs 858, 315, 316, 317 & 319
(D) Rounding
(E) = (A) - (B) + (C) + (D)
(F) WP-PB-01 (ERC Allocations) - Water Co.
(G) = (E) * (F)
(H) WP-PB-01 (ERC Allocations) - Wastewater Co.
(I) = (E) * (H)

CUPA WW Exhibit PAB-2

Tamiment Acquisition

BU 319100

NARUC Account Number	Internal Account Number	UPIS or A/D	Category	Life (Years)	Description	Debit	Credit
354.00	1290	UPIS	Wastewater		STRUCTURES & IMPROVEMENTS	70,103.29	
354.30	1295	UPIS	Wastewater		SYSTEM PUMPING PLANT	179,856.92	
354.40	1300	UPIS	Wastewater		TREATMENT & DISPOSAL EQUIPMENT	1,310,234.14	
355.00	1325	UPIS	Wastewater		POWER GENERATION EQUIPMENT	120,285.09	
360.00	1345	UPIS	Wastewater		COLLECTION SEWERS - FORCE	29,918.85	
361.00	1350	UPIS	Wastewater		Collection Sewers - Gravity	525,628.09	
362.00	1355	UPIS	Wastewater		SPECIAL COLLECTING STRUCTURES	2,800.00	
363.00	1360	UPIS	Wastewater		SERVICES TO CUSTOMERS	243,899.58	
364.00	1365	UPIS	Wastewater		FLOW MEASURING DEVICES	14,514.05	
370.00	1375	UPIS	Wastewater		RECEIVING WELLS	170,054.20	
381.00	1410	UPIS	Wastewater		PLANT SEWERS	2,396.66	
382.00	1420	UPIS	Wastewater		OUTFALL SEWER LINES	117,058.33	
389.00	1425	UPIS	Wastewater		OTHER PLANT & MISC EQUIPMENT	27,819.24	
390.00	1460	UPIS	Wastewater		OFFICE FURNITURE & EQUIPMENT	5,089.87	
391.00	1560	UPIS	Wastewater		TRANSPORTATION EQUIPMENT	15,271.11	
393.00	1470	UPIS	Wastewater		TOOLS SHOP & GARAGE EQUIPMENT	14,151.72	
394.00	1475	UPIS	Wastewater		LABORATORY EQUIPMENT	1,707.09	
395.00	1480	UPIS	Wastewater		Power Operated Equipment	8,970.00	
398.00	1500	UPIS	Wastewater		OTHER TANGIBLE PLANT	1,258.31	
304.20	1050	UPIS	Water		SOURCE OF SUPPLY & PLUMBING STRUCTURES	90,295.06	
304.30	1055	UPIS	Water		STRUCTURES & IMPROVEMENTS	1,507.39	
307.00	1080	UPIS	Water		WELLS & SPRINGS	90,894.52	
309.20	1090	UPIS	Water		Supply mains	6,581.60	
310.30	1095	UPIS	Water		POWER GENERATION EQUIPMENT	139.56	
311.00	1105	UPIS	Water		PUMPING EQUIPMENT	53,061.35	
320.00	1115	UPIS	Water		WATER TREATMENT EQUIPMENT	22,152.20	
330.00	1120	UPIS	Water		DISTRIBUTION RESERVES & STANDPIPES	652,875.54	
331.00	1125	UPIS	Water		TRANSMISSION AND DISTRIBUTION MAINS	817,046.98	
333.00	1130	UPIS	Water		SERVICES	206,103.61	
334.00	1135	UPIS	Water		METERS & METER INSTALLATIONS	162,970.30	
335.00	1145	UPIS	Water		HYDRANTS	69,284.69	
336.00	1150	UPIS	Water		BACKFLOW PREVENTION DEVICES	231.51	
339.00	1165	UPIS	Water		OTHER PLANT & MISCELLANEOUS EQUIPMENT	1,260.08	
340.00	1180	UPIS	Water		OFFICE FURNITURE & EQUIPMENT	10,329.00	
341.00	1555	UPIS	Water		TRANSPORTATION EQUIPMENT	5,162.04	
343.00	1190	UPIS	Water		TOOLS, SHOP & GARAGE EQUIPMENT	22,262.69	
345.00	1200	UPIS	Water		POWER OPERATING EQUIPMENT	128.97	
346.50	1205	UPIS	Water		COMMUNICATION EQUIPMENT	446.40	
354.00	2050	Accumulated Depreciation	Wastewater		STRUCTURES & IMPROVEMENTS		12,308.03
354.30	2055	Accumulated Depreciation	Wastewater		SYSTEM PUMPING PLANT		157,350.43
354.40	2060	Accumulated Depreciation	Wastewater		TREATMENT & DISPOSAL EQUIPMENT		800,024.68
355.00	2080	Accumulated Depreciation	Wastewater		POWER GENERATION EQUIPMENT		81,154.88
360.00	2105	Accumulated Depreciation	Wastewater		COLLECTION SEWERS - FORCE		1,559.91
361.00	2110	Accumulated Depreciation	Wastewater		Collection Sewers - Gravity		288,111.33
362.00	2115	Accumulated Depreciation	Wastewater		SPECIAL COLLECTING STRUCTURES		875.00
363.00	2120	Accumulated Depreciation	Wastewater		SERVICES TO CUSTOMERS		149,325.86
364.00	2125	Accumulated Depreciation	Wastewater		FLOW MEASURING DEVICES		13,669.69
370.00	2135	Accumulated Depreciation	Wastewater		RECEIVING WELLS		30,482.62
381.00	2170	Accumulated Depreciation	Wastewater		PLANT SEWERS		516.78
382.00	2180	Accumulated Depreciation	Wastewater		OUTFALL SEWER LINES		48,420.95
389.00	2185	Accumulated Depreciation	Wastewater		OTHER PLANT & MISC EQUIPMENT		4,014.60
390.00	2220	Accumulated Depreciation	Wastewater		OFFICE FURNITURE & EQUIPMENT		5,709.72
391.00	2300	Accumulated Depreciation	Wastewater		TRANSPORTATION EQUIPMENT		9,430.21
393.00	2230	Accumulated Depreciation	Wastewater		TOOLS SHOP & GARAGE EQUIPMENT		6,869.05
394.00	2235	Accumulated Depreciation	Wastewater		LABORATORY EQUIPMENT		1,778.22
395.00	2240	Accumulated Depreciation	Wastewater		Power Operated Equipment		5,819.08
398.00	2255	Accumulated Depreciation	Wastewater		OTHER TANGIBLE PLANT		460.09
304.20	1845	Accumulated Depreciation	Water		SOURCE OF SUPPLY & PLUMBING STRUCTURES		56,231.64
304.30	1850	Accumulated Depreciation	Water		STRUCTURES & IMPROVEMENTS		435.69
307.00	1875	Accumulated Depreciation	Water		WELLS & SPRINGS		30,828.40
309.20	1885	Accumulated Depreciation	Water		Supply mains		451.28
310.30	1890	Accumulated Depreciation	Water		POWER GENERATION EQUIPMENT		36.98
311.00	1895	Accumulated Depreciation	Water		PUMPING EQUIPMENT		17,777.26
320.00	1910	Accumulated Depreciation	Water		WATER TREATMENT EQUIPMENT		19,916.30
330.00	1915	Accumulated Depreciation	Water		DISTRIBUTION RESERVES & STANDPIPES		192,571.05
331.00	1920	Accumulated Depreciation	Water		TRANSMISSION AND DISTRIBUTION MAINS		320,215.26
333.00	1925	Accumulated Depreciation	Water		SERVICES		123,691.31
334.00	1930	Accumulated Depreciation	Water		METERS & METER INSTALLATIONS		60,549.04
335.00	1940	Accumulated Depreciation	Water		HYDRANTS		27,518.07
336.00	1945	Accumulated Depreciation	Water		BACKFLOW PREVENTION DEVICES		115.11
339.00	1950	Accumulated Depreciation	Water		OTHER PLANT & MISCELLANEOUS EQUIPMENT		1,029.41
340.00	1975	Accumulated Depreciation	Water		OFFICE FURNITURE & EQUIPMENT		15,534.38
341.00	2305	Accumulated Depreciation	Water		TRANSPORTATION EQUIPMENT		3,129.20
343.00	1985	Accumulated Depreciation	Water		TOOLS, SHOP & GARAGE EQUIPMENT		17,871.20
345.00	1995	Accumulated Depreciation	Water		POWER OPERATING EQUIPMENT		74.16
346.50	2000	Accumulated Depreciation	Water		COMMUNICATION EQUIPMENT		496.62
	1700	CWIP	Wastewater		CURRENT WORK IN PROGRESS	439,920.48	

CUPAWW STATEMENT NO. 3
June 11, 2021

August 31, 2021 Errata

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

DIRECT TESTIMONY

OF

DAVID CLARK

REVENUES, EXPENSES, RATE BASE AND TEST YEAR(S) WASTEWATER

SPONSORING CUPAWW'S EXHIBIT NOS. DMC-1 AND DMC-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025207

Direct Testimony of David Clark

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME OCCUPATION AND BUSINESS ADDRESS.

- A: My name is David Clark. I am a Financial Analyst II for Corix Regulated Utilities U.S., ("CRU-US") and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of Corix Regulated Utilities U.S. My business address is 500 W, Monroe Ste 3600, Chicago, IL 60661.

Q: PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

- A: My responsibilities include: financial analysis of individual subsidiaries of CRU-US, preparation and submission of rate applications, facilitation of regulatory audits, and the submission of testimony and exhibits to support rate applications. I am responsible for ratemaking activities for individual companies, including CUPA.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

- A: I graduated from East Texas Baptist University in Marshall, Texas in 2007 with a Bachelor of Business Administration in Accounting. I worked from 2007 to 2012 in the accounting/finance group for a telecommunications company before joining Corix in December of 2012 as a Senior Accountant.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?

- A: No, I have not.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

- A: My testimony will provide an overview of the components included in determining the appropriate level of recovery requested by CUPA. I will provide insight as to how CUPA's forecasted test year income statement and rate base were developed. I will sponsor CUPAWW Exhibit No. DMC-1 which is supporting data as to the rate base, revenue and expense claims of CUPA. This supporting data was supplied as part of CUPA's initial filing. I am also sponsoring CUPAWW Exhibit No. DMC-2 which contains all the workpapers referenced in my testimony.

Q: Please describe the contents of CUPAWW Exhibit No. DMC-1.

A: CUPAWW Exhibit No. DMC-1 is divided into two sections. Section 1 contains general information as to the tariff supplement, rate base, revenues and expenses in response to the Commission's regulations at 52 Pa. Code §53.52. Section 2 contains Supporting Schedule Nos. 1 through 12, which provide further, detailed information from which the Company's various claims, shown in Section 1, were derived.

Q: WHAT ARE THE NAMES OF THE SERVICE TERRITORIES SERVED BY CUPA?

- A: The service territories include:

- Penn Estates Utilities, Inc. ("PEUI") which has both water and sewer operations.

- Utilities Inc. of Westgate ("UIW") which has only water operations.

- Utilities Inc. of Pennsylvania ("UIP") which has only sewer operations

- Tamiment (formerly known as Pennsylvania Utility Co.) which has both water and sewer operations.

TEST YEAR

Q: WHAT TEST YEAR IS THE COMPANY PROPOSING?

- A: CUPA has prepared all of the attachments and schedules using a fully projected future test year ("FPFTY") ended December 31, 2022. CUPA's schedules also include a "per books base period" for the fiscal year ("FY") ended December 31, 2020 and a forecasted period for the FY ended December 31, 2021.

Q: WHY IS THE COMPANY PROPOSING THE USE OF A FPFTY?

- A: The Company is proposing the use of a future test year which will enable it to recover costs for large, forecasted projects and increasing operating expenses without seeking recovery through multiple rate proceedings, thereby reducing rate case expense for ratepayers and increasing rate affordability. The use of a forecasted test year will enable the Company to reduce regulatory lag and provide the Company with a reasonable opportunity to earn the return the PUC allows because historic test years do not consider changes that occur during the rate case or thereafter.

FORECASTING METHODOLOGY

Q: HOW WERE THE COMPANY'S FORECASTS DEVELOPED?

- A: In general, CUPA uses a "bottom up" budgeting approach which attempts to determine cost drivers for every item, where practical. The Company's forecasts were developed with input from management, operations teams, and personnel from CRU-US's shared services business unit. The projections were finalized in January of 2021 and were approved by CUPA's Management Committee or Board in January of 2021. Forecast guidelines are discussed in the below sections; "Net Income Changes" and "Rate Base Changes".

Q: HOW WAS THE COMPANY'S FORECASTED REVENUE REQUIREMENT DEVELOPED?

- A: The Company revenue requirement is developed by matching the revenues for the year the rate increase is authorized with the forecasted operating expenses and forecasted rate base for such year. This will help provide the Company a reasonable opportunity to earn its authorized return.

Q: DO YOU ANTICIPATE ANY MATERIAL CHANGES TO THE PROJECTIONS?

- A: No, I do not.

Q: IN YOUR OPINION DO THESE PROJECTIONS OR FORECASTS BEST REPRESENT CUPA'S EXPECTED FINANCIAL PERFORMANCE?

- A: Yes, they do.

Q: IN YOUR OPINION ARE THESE PROJECTIONS REASONABLE AND RELIABLE?

- A: Yes, they are. The projections are reasonable and are justifiable. Additionally, CUPA's work papers for planned projects and forecasts enable the other parties and the Commission to both test and recognize their appropriateness and reasonableness.

RELIEF REQUESTED

Q: PLEASE SUMMARIZE THE RELIEF SOUGHT BY CUPA.

- A: As discussed in greater detail below, CUPA is requesting an incremental rate increase to produce additional sewer revenues of $998,705 per year.

Q: PLEASE SUMMARIZE HOW THE PROPOSAL FOR CUPA'S REQUESTED RATE INCREASE WILL IMPACT CUSTOMER'S BILLS.

- A: On a state-wide rate level the average wastewater customer will pay $78.22 per month for wastewater service.

Q: WHY IS CUPA REQUESTING RATE RELIEF?

- A: Under present rates, neither CUPA nor any of its wastewater service territories are able to cover their operating expenses, costs of capital, and earn a reasonable return on their system investments. The utility's current operating income statement for twelve months ended December 31, 2020, ("Per Books") is shown in Section 1, Page 11 of CUPAWW Exhibit No. DMC-1. The current rates for CUPA's territories do not reflect anticipated rising operational costs and capital investments in infrastructure which have been realized since CUPA's wastewater territories' rates were last established. CUPA is requesting rate relief using a FPFTY for the twelve months ended December 31, 2022 so that it can continue to provide safe, reliable and efficient services to its customers while earning a reasonable return for its investors.

NET INCOME CHANGES

IN ALL INSTANCES BELOW THE TERM "CHANGE" REPRESENTS THE DIFFERENCE BETWEEN TWO PERIODS BEING COMPARED.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO SERVICE REVENUES.

- A: Forecasted levels of wastewater revenues reflect test year-end customer counts. The Company does not anticipate any changes to customer count through the end of the FPFTY.

Q: PLEASE EXPLAIN GENERALLY HOW THE FORECASTED CHANGES TO O&M (MAINTENANCE AND GENERAL EXPENSES) WERE DETERMINED.

- A: Forecasted O&M expenses for periods December 31, 2021 and 2022 were developed using the guidelines discussed below. O&M expenses can be direct-billed to CUPA, allocated to CUPA by the Service Company, President, Regional, and State Cost Centers, or costs can be a combination of direct and allocated expenses. Allocations are based on December 31, 2020 weighted Equivalent Residential Connection ("ERC") counts for each cost type. Please refer to Exhibit 2 WP-DC-01 (ERC Allocations).

Q: PLEASE EXPLAIN HOW FORECASTED PURCHASED POWER COSTS WERE DETERMINED.

- A: Electric power costs are forecasted, by month, based on the historical levels of electric power costs. FY 2021 and FY 2022 forecasts are based on the latest seven years of vendor invoicing for the service periods 06/01/2013-05/30/2020. The latest twelve months (06/01/2019-05/30/2020) of service costs were used as a base and an average annual growth rate from the historical periods was applied to all forecast periods. It was assumed that any seasonality from the seven years analyzed will continue. Details of these calculations are provided in WP-DC-02 (Purchased Power Expense). As shown in Section

1, Page 12 of CUPAWW Exhibit No. DMC-1, purchased power costs are forecasted to decrease from $142,271 in the base period to $125,637 in the FPFTY. The company engaged with a new power supplier, Integrity Energy, which resulted in a decreased forecasted purchased power expense for the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED SLUDGE HAULING AND SEWER RODDING COSTS WERE DETERMINED.

- A: Sludge hauling is forecasted based on the service contracts for the UIP, Penn Estates, and Tamiment systems. For UIP, the Company has a service contract with Hydro Tech. For Penn Estates and Tamiment, the Company has a service contract with Environmental Service Corp. Sludge hauling expenses are forecasted to decrease from $349,262 in the base period to $226,788 in the FPFTY. Sewer Rodding Expense is forecasted based on estimated needs. The company has reduced Sewer Rodding Expense as a result of the Inflow and Infiltration projects included in the capital plan. Sewer Rodding Expenses are forecasted to decrease from $4,079 in the base period to $0 in the FPFTY. Additional detail and underlying calculations are provided in WP-DC-05 (Sludge Hauling and Sewer Rodding Expense).

- Q: PLEASE EXPLAIN HOW FORECASTED MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSES WERE DETERMINED.

- A: Maintenance and repair expenses are forecasted for based on analysis of historical data and estimated needs of Operations. Additional detail and underlying calculations are provided in WP-DC-04 (Materials, Supplies, and Other Maintenance Expense). As shown in Section 1, Page 12 of the CUPAWW Exhibit No. DMC-1, materials, supplies, and other

maintenance expenses are forecasted to decrease from $148,816 in the base period to 134,556 in the FPFTY. Maintenance and Repair expenses are broken down into the following categories:

- Deferred Maintenance – Amortization of deferred maintenance is forecasted to increase from $18,527 in the base period to $32,800 in the FPFTY. Deferred maintenance expense is forecasted based on current and planned deferred asset costs. These costs are amortized, each month, over their useful lives until no value remains. The Company has included an expense adjustment/reduction of $7,424 to address an issue that was identified post-filing.

- Uniforms – Uniforms are forecasted based on a 3-year historical average expense analysis. Uniform costs are forecasted to increase from $1,735 in the base period to $3,247 in the FPFTY.

- Weather/Hurricane/Fuel Expense – Weather/Hurricane/Fuel Expense is forecasted based on the 3-year historical average in the territories and state cost center. Weather/Hurricane/Fuel Expense costs are forecasted to increase from $1,214 in the base period to $2,329 in the FPFTY.

- Other Maintenance Expense – Other Maintenance expenses have been forecasted based on a 3-year historical average expense. Other Maintenance Expense cost are forecasted to decrease from $127,339 in the base period to $96,180 in the FPFTY. The forecasted decrease is the result of using the 3-year historical average expense.

Q: PLEASE EXPLAIN HOW FORECASTED TESTING, AND MISCELLANEOUS EXPENSES WERE DETERMINED.

- A: Additional detail and underlying calculations are provided in WP-DC-11 (Testing, Meter Reading, and Misc. Expense). As shown in Section 1, Page 12 of CUPAWW Exhibit No. DMC-1, operating expenses charged to plant are forecasted to increase from $28,835 in the base period to $65,303 in the FPFTY. Testing, Travel, and Miscellaneous Expense is broken down into the following categories:

- Miscellaneous Expense – Miscellaneous costs are forecasted based on an analysis of recurring costs such as membership dues and bank service charges. Other miscellaneous costs such as training expense, are based on the needs of each department. Miscellaneous Expense is forecasted to increase from $6,916 in the base period to $9,469 in the FPFTY.

- Travel Expense – Travel Expense is forecasted based on an analysis of historical costs for travel related expenses in Pennsylvania, as well as the other cost centers that are allocated to Pennsylvania operations. The increase in costs is driven by fewer travel expenses being incurred during the test year due to the pandemic. Travel expenses are forecasted to increase from $3,640 in the base period to $5,352 in the FPFTY.

- Maintenance Testing - Maintenance testing costs are forecasted based on the anticipated testing requirements for CUPA operations. Testing expense is forecasted using the monthly historical average costs. Maintenance testing costs are forecasted to increase from $18,279 in the base period to $50,482 in the FPFTY. This increase is primarily due to base period water vs. wastewater allocation differences due to a change in accounting software.

Q: PLEASE EXPLAIN HOW FORECASTED CHEMICAL COSTS WERE DETERMINED.

- A: The monthly forecasts for Chemicals are based on anticipated demand of each chemical. The forecast is based on analysis completed by operations, which includes estimated chemical costs per unit, by chemical type. The estimated chemical costs are determined by review of current costs. An estimated number of units, which is based on historical seasonal needs, of each chemical type is then used as a multiplier to determine forecasted chemical expense for each system. Additional detail and underlying calculations are provided in WP-DC-06 (Chemical Expense). As shown in Section 1, Page 12 of CUPAWW Exhibit No. DMC-1, chemical expense is forecasted to increase from $83,007 in the base period to $129,205 in the FPFTY, with the increase primarily driven by increases to chemical demands of Aluminum Chloride, Stern Pac, and denitrifying chemicals.

Q: PLEASE EXPLAIN HOW FORECASTED TRANSPORTATION COSTS WERE DETERMINED.

- A: Forecasts for Transportation Expense are based on analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-07 (Transportation Expense). As shown in Section 1, Page 12 of CUPAWW Exhibit No. DMC-1, transportation costs are forecasted to decrease from $28,899 in the base period to $26,736 in the FPFTY. Transportation expenses are broken down into the following categories:

- Fuel – Fuel expense is forecasted to increase from $11,748 in the base period to $13,159 in the test year. Fuel cost for FY 2022 were forecasted by using projected national fuel prices (cost per gallon) from the US Energy Information Administration's outlook as a base and adjusting by the average fuel price change over the prior six years, and then

normalizing for Pennsylvania. A two-year average of gallons used (August 2019-July 2020) for the Company's vehicles was used as a base for forecasted gallons to be purchased for the FPFTY 2022. The increase to expense is driven by a forecasted increase in fuel costs.

- Auto Repairs – Monthly historical average costs drive the auto repair forecast for the Pennsylvania State cost center. Auto Repair expense is forecasted to decrease from $12,991 in the base period to $11,963 in the FPFTY.

- Other – Other transportation expenses are forecasted to decrease from $4,160 in the base period to $1,613 in the FPFTY. Other transportation expense includes license renewals and miscellaneous transportation costs.

Q: PLEASE EXPLAIN HOW FORECASTED ENGINEERING FEES WERE DETERMINED.

- A: Engineering Fees are forecasted for based on analysis of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-08 (Engineering Fees). As shown in Section 1, Page 12 of CUPAWW Exhibit No. DMC-1, Engineering Fees are forecasted to increase from $24,055 in the base period to $11,784 in the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED CONTRACTUAL SERVICES-LEGAL COSTS WERE DETERMINED.

- A: Contractual Services – Legal Costs forecasts are driven by analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-08 (Contractual Services - Legal). As shown in

Section 1, Page 12 of CUPAWW Exhibit No. DMC-1, contractual services – legal costs are forecasted to decrease from $6,851 in the base period to $4,517 in the FPFTY.

Q: PLEASE EXPLAIN HOW FORECASTED OFFICE UTILITIES, SUPPLIES, & OTHER OFFICE EXPENSES WERE DETERMINED.

- A: Forecasts for Office Utilities, Supplies and Other Office Expense are based on analyses of historical data and estimated needs across all departments. Additional detail and underlying calculations are provided in WP-DC-11 (Office Supplies, Utilities and Other Office Expense). As shown in Section 1, Page 12 of CUPAWW Exhibit No. DMC-1, Office Utilities, Supplies and Other Office Expense is forecasted to decrease from $58,370 in the base period to $53,513 in the FPFTY. Office Utilities Supplies and Other Office Expense is broken down into the following categories:

- Office Expense – The forecast for office expenses is based on estimated needs and the assumption historical costs will increase by a growth rate of 2%. Office costs are forecasted to increase from $7,475 in the base period to $9,607 in the FPFTY.

- Office Utility – Forecasts for office utilities are based on estimated needs and historical spend. Office costs are forecasted to decrease from $32,683 in the base period to $28,651 in the FPFTY.

- Billing and Customer Service – Billing and customer service costs are forecasted to decrease from $14,347 in the base period to $11,849 in the FPFTY. The decrease in costs is related to a decrease in customer mailings anticipated during the FPFTY.

- Information Technology – Information Technology costs are forecasted to decrease from $3,865 in the base period to $3,406 in the FPFTY.

Q: PLEASE EXPLAIN HOW REGULATORY COMMISSION EXPENSES WERE DETERMINED.

- A: The forecast for regulatory expense is based on current and planned rate case costs. These costs are amortized each month over their useful lives until no value remains. As shown in Section 2, Page 8 of CUPAWW Exhibit No. DMC-1, regulatory commission expense is forecasted to increase from $31,176 in the base period to $43,464 in the test year. The projected increase in regulatory commission expense is driven by the projected expense to be incurred for the current case. If necessary, this expense will be updated at the time rebuttal testimony is filed to reflect a more accurate forecast amount.

Q: PLEASE EXPLAIN HOW INSURANCE COSTS WERE DETERMINED.

- A: Insurance costs are forecasted at CRU-US and are based on review and analyses of current and projected insurance policies. Additional detail and underlying calculations are provided in WP-DC-10 (Insurance Expense). As shown in Section 1, Page 12 of CUPAWW Exhibit No. DMC-1, insurance expense is forecasted to increase from $39,106 in the base period to $60,070 in the FPFTY. The increase in costs is driven by an increase in insurance premiums from Marsh and Alliant, CRU-US's primary insurance providers. Forecasted costs for 2021 and 2022 are calculated by assuming historical premium increase percentages.

Q: PLEASE EXPLAIN HOW TAXES OTHER THAN INCOME TAXES WERE DETERMINED.

- A: Taxes Other than Income Taxes ("TOTI") are forecasted based on forecasted levels of salaries, revenues, and plant in service. Additional detail and underlying calculations are provided in supporting work papers (referenced below). As shown on Section 2, Page 5 of CUPAWW Exhibit No. DMC-1, TOTI is shown to decrease from $78,210 in the base period to $45,078 in the FPFTY. TOTI expense is broken down into the following categories shown below:

- Payroll Taxes – Payroll taxes are forecasted to increase from $33,860 in the base period to $38,466 in the test year. Payroll taxes are calculated based on forecasted salaries. Additional detail and underlying calculations are provided in WP-PB-04 (Payroll Tax Expense - CONFIDENTIAL).

- Utility Commission Assessment – Utility Commission assessments are forecasted to increase from $11,054 in the base period to $24,251 in the FPFTY. Utility Commission tax assessment is calculated as 0.66% of revenue. The increase in utility assessments is based on an increase in recognized revenue. Additional detail and underlying calculations are provided in WP-DC-12 (Utility Commission Tax Expense).

- Property Taxes – Property taxes are reflecting a forecasted increase from $33,296 in the base period to $41,350 in the FPFTY. PA property tax rate is calculated using an average historical property tax rate, which is an average of historical property tax expense as a percentage of net plant in service. The increase in property taxes is based on an increase in forecasted net plant in service. Additional detail and underlying calculations are provided in WP-DC-13 (Property Tax Expense).

- Company Adjustment – The Company has included an expense adjustment/reduction of $65,601 to address an issue that was identified post-filing.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO DEPRECIATION.

- A: The Company is not proposing any change to current depreciation rates for each wastewater service territory. The Company included an annualized level of depreciation based on the FPFTY plant balance.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO AMORTIZATION.

- A: The Company is not proposing any change to current amortization rates for each wastewater territory.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO INCOME TAXES.

- A: Forecasted Income Taxes are computed on taxable income at the following rates (21% Federal and 9.99% State).

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO INTEREST DURING CONSTRUCTION.

- A: Interest During Construction ("IDC") on the P&L is eliminated for rate-making purposes.

RATE BASE CHANGES

IN ALL INSTANCES BELOW THE TERM "CHANGE" REPRESENTS THE DIFFERENCE BETWEEN TWO PERIODS BEING COMPARED.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO UTILITY PLANT IN SERVICE.

- A: Forecasted Utility Plant in Service is based on the per books amounts and adjusted for the proper reallocation of vehicles and computers. Forecasted changes also include forecasted vehicle additions as shown on Supporting Schedule No. 9(a-b), Section 2 of CUPAWW Exhibit No. DMC-1. Forecasted investments for wastewater infrastructure are described below and included in "Net Pro Forma Plant".

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO ACCUMULATED DEPRECIATION.

- A: Forecasted Accumulated Depreciation is based on the per books amounts and adjusted for the proper reallocation of vehicles and computers. Forecasted changes also include the incremental depreciation related to the base year gross plant in service and forecasted plant additions net of all retirements.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO CASH WORKING CAPITAL.

- A: Forecasted Working Capital is calculated based on forecasted O&M expense as well as forecasted Taxes Other Than Income expense.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO NET CONTRIBUTIONS IN AID OF CONSTRUCTION.

- A: Forecasted Net Contributions in Aid of Construction were adjusted by the incremental amortization of the base year gross balances.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO ACCUMULATED DEFERRED INCOME TAXES.

- A: Forecasted Accumulated Deferred Income Taxes was adjusted to reflect projected differences between book depreciation and tax depreciation.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO NET PLANT ACQUISITION ADJUSTMENT.

- A: Forecasted Net Plant Acquisition Adjustment ("PAA") was adjusted by the incremental amortization of the base year gross balances.

Q: PLEASE EXPLAIN THE FORECASTED CHANGES TO NET PRO FORMA PLANT.

- A: Net Pro Forma Plant includes the forecasted additions of capital projects, capital additions/replacements, and capitalized time. Forecasted methods are detailed below.

Q: PLEASE EXPLAIN HOW FORECASTED CAPITAL INVESTMENTS WERE DETERMINED.

- A: An analysis of the Company's utility plant in service was made by the Company's operations and capital projects in order to determine the necessary capital projects and improvements through the end of the FPFTY (please refer to the testimony of Company witness Bryce Mendenhall for further details on capital investments). Forecasted general ledger plant additions are $2,424,442 for FY 2021 and $3,114,985 for FY 2022. Additional detail and underlying calculations are provided in WP-DC-14 (Net Capital Investments).

- Capital Projects/Retirements - Capital Project costs are calculated based on cost estimates sourced from the Company's operations and capital projects team and, where applicable, projections may be sourced from engineering firms or other qualified external vendors.

- Capital Additions/Replacements: FY December 31, 2021 and 2022 forecasts are estimated based on a historical spending average from years 2013-2020.

- Capitalized Time: FY December 31, 2021 and 2022 forecasts are estimated based on a historical spending average from years 2013-2018.

- Transportation: After a comprehensive review of each vehicle's mile, condition, and age, vehicle replacement costs are provided by operations & finance. Associated retirements are based on book costs of the replaced vehicles at the projected time of replacement.

- Computers: Forecasts are estimated based on historical average along with anticipated software and equipment.

Q; PLEASE EXPLAIN HOW FORECASTED DEFERRED CHARGES WERE DETERMINED

- A; The Company is forecasting for an decrease to deferred charges from $105,639 in the base year to $66,921 in the FPFTY. CUPA is proposing to include the FY 2022 net book value for deferred assets in rate base.

Q; PLEASE EXPLAIN CUPA'S RATIONALE FOR INCLUDING DEFERRED CHARGES IN RATE BASE.

- A: The deferred charges outlined are incurred solely for the benefit of the ratepayers. The cost included in rate base are considered to be reasonable with some of the deferred assets being requirements to provide adequate services. The Company is proposing recovery of the deferred charges mentioned above as these charges are incurred in frequencies greater than one year. Cost provided for deferred charges are paid at inception resulting in a negative net present value. Please see refer to the table below for an example. The Company believes earning a return "on" and "of" the deferred assets is necessary to help offset their negative NPV. This allows the Company to easily attract capital necessary to continue providing an adequate level of service.

Defer and Amortize (in Rate Base)

Year	0	1	2	3	4	5
Tank Inspections	(2,500)	-	-	-	-	(2,500)
Amortization	-	(500)	(500)	(500)	(500)	(500)
Rate Base	2,500	2,000	1,500	1,000	500	2,500
ROE	11%	11%	11%	11%	11%	11%
Cost of Debt	6%	6%	6%	6%	6%	6%
Equity Thickness	50%	50%	50%	50%	50%	50%
Gross Up	71.2%	71.2%	71.2%	71.2%	71.2%	71.2%
Revenue (RC every 2 yrs)	-	-	651	651	576	576
Net Cash Flow	**(2,500)**	**-**	**651**	**651**	**576**	**(1,924)**

Net Present Value (in Rate Base)	($2,262.46)

Defer and Amortize (not in Rate Base)

Year	0	1	2	3	4	5
Tank Inspections	(2,500)	-	-	-	-	(2,500)
Amortization	-	(500)	(500)	(500)	(500)	(500)
Rate Base	-	-	-	-	-	-
ROE	11%	11%	11%	11%	11%	11%
Cost of Debt	6%	6%	6%	6%	6%	6%
Equity Thickness	50%	50%	50%	50%	50%	50%
Gross Up	71.2%	71.2%	71.2%	71.2%	71.2%	71.2%
Revenue (RC every 2 yrs)	-	-	377	377	438	438
Net Cash Flow	**(2,500)**	**-**	**377**	**377**	**438**	**(2,062)**

Net Present Value (not in Rate Base)	($2,861.34)

COST OF CAPITAL AND CAPITAL STRUCTURE

Q: PLEASE EXPLAIN CUPA'S FORECASTED CAPITAL STRUCTURE

- A: The Company is proposing a forecasted capital structure of 52.32% debt and 47.68% equity. The Company included a forecasted cost of debt of 5.05% and cost of equity of 10.35% producing a cost of capital of 7.58%. Please refer to the direct testimony of company witness Dylan D'Ascendis for the development of the cost of equity.

PROPOSED REVENUE INCREASE

Q: PLEASE EXPLAIN THE PROPOSED REVENUE INCREASE.

- A: Section 1, Page 11 of the Company's filing shows the forecasted future test year ended December 31, 2022 net income of $307,167. The proposed rates are calculated to provide the opportunity to earn an 7.58% rate of return on net original cost rate base of $13,302,090. The future test year ended December 31, 2022 revenue requirement is calculated by determining the requested increase in operating income. The requested level of operating income is determined by applying the stipulated rate of return of 7.58% to the proposed rate base as of December 31, 2022 for the Company (shown on Section 1, Page 14 of CUPAWW Exhibit No. DMC-1). The requested level of net operating income is $1,007,456. The operating income is then grossed up for: (a) Federal income taxes, (b) State income taxes and (c) Uncollectibles. The resulting proposed increase in revenue requirements is $998,705.

Q: DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

- A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

CUPA WW Exhibit DMC-1

COMMUNITY UTILITIES OF PENNSYLVANIA INC.

RATES, RULES AND REGULATIONS GOVERNING

THE PROVISION OF WASTEWATER COLLECTION, TREATMENT
AND/OR DISPOSAL SERVICE TO THE PUBLIC IN

STROUD AND POCONO TOWNSHIPS IN MONROE COUNTY, A PORTION OF WEST BRADFORD TOWNSHIP IN CHESTER COUNTY, AND PORTIONS OF LEHMAN TOWNSHIP IN PIKE COUNTY,

PENNSYLVANIA

Service Territory Formally Known as Penn Estates Utilities, Inc., Utilities, Inc., and Pennsylvania Utility Company

ISSUED: April 12, 2021 EFFECTIVE: June 12, 2021

ISSUED BY:
Bryce Mendenhall, President
500 W. Monroe Suite 3600
Chicago, IL 60660
(800) 860-4512

NOTICE

THIS TARIFF SUPPLEMENT INCREASES AND CHANGES THE SCHEDULE OF RATES FOR ALL CUSTOMERS IN THE PENN ESTATES UTILITIES INC., PENNSYLVANIA UTILITY CO., AND UTILITIES INC OF PENNSYLVANIA. SERVICE TERRITORIES

LIST OF CHANGES

Supplement No. 7 increases the schedule of rates applicable to all customers in accordance with the Pennsylvania Public Utility Commission's Final Order in Docket. No. R-2019-3008948. The increase moves rates toward unitization as stated in the Joint Petition filed at the foregoing docket. The increase in annual operating revenue is intended to produce an additional $998,705 per year.

Supplement No. 7 has also been adjusted to reflect charges billed on a quarterly basis to be billed on a monthly basis in arrears.

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PART I: SCHEDULE OF RATES AND CHARGES

Section A - Rates for Metered Service

The utility has no approved metered rate. All wastewater customers are subject to flat rates herein within Part I, Section B.

Section B - Flat Rates

The charge per unit is a flat rate either per month or per quarter as follows:

Residential

$78.22 per month per lot located within Penn Estates and upon which a structure has been erected. This rate will be billed monthly. (I)

Pool

$78.22 per month per lot located within Penn Estates and at which a community pool or showering facility has been erected. This rate will be billed monthly. (I)

Clubhouse

$78.22 per month for the Penn Estates Clubhouse. This rate will be billed monthly. (I)

All Other (Customer not Identified as Residental, Pool, & Clubhouse)

$78.22 per month for customers not considered Residential, Pool, Clubhouse or Availability. This rate will be billed monthly. (I)

Section C - Returned Check Charge

A charge of $25 will be assessed any time where a check which has been presented to the Company for payment on account has been returned by the payor's bank for any reason.

Section D - Availability

$22.91 per month per lot if located within Penn Estates and upon which no structure has been erected for an availability charge. This rate will continue to be billed quarterly. (I)

Section E – Tampering Fee

Unauthorized connections, repairs, or other tampering with the system will render the service subject to immediate discontinuation without notice and wastewater service shall not be restored until such unauthorized connections, repairs, and other tampering with the system have been removed and unless settlement is made in full and for wastewater service estimated by the Company to have been used by reason for such unauthorized connection. The fee for these unauthorized connections, repairs, and system tampering shall be $200 plus any actual costs to repair.

(I) Indicates Increase

PART I: SCHEDULE OF RATES AND CHARGES

Section A - Rates for Metered Service

The utility has no approved metered rate. All wastewater customers are subject to flat rates herein within Part I, Section B.

Section B - Flat Rates

The charge per unit is a flat rate either per month or per quarter as follows:

Residential

Per Month, per household	$ 78.22	(C)(I)

The flat rate charges will be billed quarterly covering service for the three (3) months immediately preceding presentation of bill and will be due and payable as rendered in equal amounts of $234.66 per quarter. Customers have the option of monthly billings if they so desire. Monthly bills will be in equal amounts of $78.22 per month. (I)

School

Per month, per pupil	$ 1.61	(I)

The charges will be billed quarterly based on the rate of $4.82 per pupil per quarter based on the number of pupils for the preceding three (3) month period. (I)

All Other (Customers not identified as Residential or School)

Per year, per month	$ 78.22	(C)(I)

The flat rate charges will be billed monthly in arrears covering service for the previous month immediately preceding presentation of bill, (C)(I)

(I) Indicates Increase
(C) Indicates Change

Part I: SCHEDULE OF RATES AND CHARGES (CONT'D)
(Service Territory Formally Known as Public Utility Company – Lehamn Township, Pike County)

Section A - Rates for Service

The charge per residential dwelling unit for water and sewer service combined is a flat rate either per month or per quarter as follows:

Eagle Village:	Phases I, II, III $234.66 per quarter
Eagle Point:	$78.22 per month
The Glen at Tamiment:	$234.66 per quarter - occupied lots
	$234.66 per quarter - unoccupied lots
Tamiment Resort & Conference Center:	Bulk rate to be developed

Residential (Metered Rate):

Customer Charge		
Eagle Village (Monthly)	$78.22	(I)
Eagle Village - Office (Monthly)	$78.22	(I)
The Glen at Tamiment (Monthly)	$78.22	(I)
Eagle Point (Monthly)	$78.22	(I)
Availability Charge for Unoccupied Lots	$22.91 per Monthly	(I)

Commercial (Metered Rate):

Customer Charge (Monthly)	$$78.22	(D)

(I) Indicates Increase
(D) Indicates Decrease

Community Utilities of Pennsylvania Inc.
Wastewater Division

Supporting Data
for
Docket No. R-2021-3025207

By

David Clark
Financial Analyst II

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Community Utilities of Pennsylvania Inc.
Wastewater Division
R-2021-3025207
Statement of Reasons for Rate Increase
Answer to 52 PA. Code 53.52 (b) (1)

Community Utilities of Pennsylvania – Wastewater Operations

Community Utilities of Pennsylvania Inc. ("Company") filed Supplement No. 7 to Tariff Wastewater – Pa. P.U.C. No. 1. on April 12th, 2021 with a requested effective date of June 12th, 2021 for the purpose of increasing Wastewater service revenue by $998,705 per annum which represents a 37.48% increase over the service revenues previously generated by the service territories formally known as Penn Estates Utilities, Inc., Utilities Inc., of Pennsylvania, and Pennsylvania Utility Company.

For the twelve months ended December 31, 2020, December 31, 2021, and December 31, 2022, respectively, utility operations produced book net income, forecasted net income under present rates, and fully projected pro-forma net income under proposed rates as follows:

Period	Net Income/(Loss)	Reference
Base Year per Books (12/31/2020)	$5,585[1]	Section 1 (pp. 1-19)
Future Test Year (12/31/2021)	$56,206[1]	Section 1 (pp. 1-19)
Future Test Year (12/31/2022)	($44,582)[1]	Section 1 (pp. 1-19)
Pro-Forma Proposed (12/31/2022)	$655,708[2]	Section 1 (pp. 1-19)

The current rate filing is necessary to realize a reasonable rate of return on the Company's actual and forecasted capital investment and recover forecasted operating expenses. The factors given consideration in calculating the proposed increase are set forward in the following narrative.

Operating Revenues

The per books operating revenue for the twelve months ended December 31, 2020 totaled $2,529,082. The Company performed a billing analysis to reflect the proper level of service revenue for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022. The analysis produced an adjustment that resulted in an overall increase in service revenue of $80,207 for the twelve months

[1] Present rates
[2] Proposed rates

ended December 31, 2021. These adjustments, combined with projected levels of miscellaneous revenues, forfeited discounts, and uncollectible accounts produce pro-forma operating revenue under present rates of $2,652,954 for the twelve months ended December 31, 2021, and December 31, 2022. After accounting for the increase in uncollectible accounts ($7,266) related to the Company's revenue request of $991,439, the Company's proposed fully projected test year operating revenue is $3,644,392.

Operating Expenses

For the twelve months ended December 31, 2020, December 31, 2021, and December 31, 2022, respectively, utility operations produced per book, forecasted, and fully projected pro-forma operating expenses as follows:

Period	Operating Expense	Reference
Base Year Per books (12/31/2020)	$2,339,988	Section 1 (pp. 1-11)
Future Test Year (12/31/2021)	$2,308,510	Section 1 (pp. 1-11)
Future Test Year (12/31/2022)	$2,345,787	Section 1 (pp. 1-11)
Fully projected (12/31/2022)	$2,636,936	Section 1 (pp. 1-11)

The Company has projected net increased operating expenses costs of $296,948 between the base year ended December 31, 2020 and the fully projected future test year ended December 31, 2022 as reflected in response to tariff Regulation c (1) Sheets1a.

Original Cost – Plant in Service

The original costs of the plant in service at December 31, 2020 were compiled through Company records. The gross plant in service per books at the end of the base year is $21,800,965. Pro-forma plant additions of $2,294,002 and $2,978,941 for the future test years ended December 31, 2021, and December 31, 2022 respectively have been included on Tariff Regulation (c) (3) to reflect the fully projected future test year level of utility plant in service as of December 31, 2022.

Accumulated Depreciation and Annual Depreciation Expense

The calculations of annual and accumulated depreciation are based upon the straight-line method. An adjustment has been made to calculate pro-forma depreciation expense and the level of pro-forma accumulated depreciation using class of asset rates on the Company's books, going level, as well as projected plant in service as of December 31, 2021, and December 31, 2022. Capital adjustments result in an increase to depreciation expense of $134,485 and increase of $83,551 for the future test years ended December 31, 2021, and December 31, 2022 respectively. The pro-forma accumulated depreciation amounts to $9,790,837 and $10,455,892 as of December 31, 2021, and December 31, 2022 respectively. Please see Supporting Schedules No. 4 and No. 9 in Section 2.

Calculation of Rate Base

Nine elements were used to determine rate base for the Company have been included on Tariff Regulation (c) (3). They are as follows:

I. Net Plant in Service
II. Cash Working Capital
III. Contributions in Aid of Construction (Net)
IV. Accumulated Deferred Income Taxes
V. Customer Deposits
VI. Net Plant Acquisition Adjustment
VII. Deferred Charges
VIII. Pro forma Plant Additions (Net of Retirements)

I. Net Plant in Service

Net Plant in Service was determined by deducting per-books and pro forma accumulated depreciation from per books and pro forma gross utility plant in service as of December 31, 2020, December 31, 2021, and December 31, 2022.

Wastewater Operations	Supporting Schedule No.	Per Books Base Year Ended 12/31/2020	Future Test Year Ended 12/31/2021	Pro-forma FPFTY Ended 12/31/2022
Utility Plant in Service	(c)(3)	$ 20,845,060	$ 24,094,967	$ 27,073,908
Accumulated Depreciation	(c)(4)	(9,209,332)	(9,790,837)	(10,455,892)
Net Utility Plant:		$ 11,635,729	$ 14,304,130	$ 16,618,016

II. Cash Working Capital

The amount included for Cash Working Capital is based on 1/8 method using per books and pro forma operating and maintenance expenses and taxes other than income of $1,981,432, $1,812,703, and $1,809,443 for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022 respectively resulting in cash working capital levels of $247,679, $226,588, and $226,180 for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022 respectively. Please see Supporting Schedules No. 11 in Section 2.

III. Contribution in Aid of Construction

The amount included in Contributions in Aid of Construction are per books and projected pro-rated amounts of ($1,948,583), ($1,861,821), and ($1,775,060) for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022

IV. Accumulated Deferred Income Taxes

The amount included in Accumulated Deferred Income Taxes are per books and projected pro-rated amounts of ($734,226), ($750,321), and ($774,535) for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022 respectively.

V. Customer Deposits

The amount included in Customer Deposits are per books ($1,825), for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022.

VI. Plant Acquisition Adjustment

The amount included in Plant Acquisition Adjustment is the per books number net of accumulated amortization as of December 31, 2020 and amounts to ($1,174,754). Net PAA is rolled forward to December

31, 2021 and December 31, 2022 using current amortization rates and result in Net PAA of ($1,116,181) and ($1,057,608) for the test years ended December 31, 2021, and December 31, 2022 respectively.

VII. Deferred Charges

The amount included in Deferred Charges are per books and projected pro-rated amounts of $105,639, $99,721, and $66,921 for the test years ended December 31, 2020, December 31, 2021, and December 31, 2022 respectively.

Rate of Return

The Company uses the capital structure of its parent company, Utilities, Inc. to calculate its rate of return. Utilities Inc.'s capital structure as of December 31st, 2020 is as follows:

Debt	$342,293,595
Common Equity	311,966,040
Total Capital	$654,259,635

For December 31, 2022, the Company adopts a 52.32% debt-to-equity capital ratio and 5.05% cost of debt. The Company has utilized an overall 7.58% weighted average cost of capital and 10.35% cost of equity for this application.

Tariff Design

Community Utilities is proposing to consolidate rates between its three service territories formally known as Penn Estates Utilities, Inc., Utilities, Inc. of Pennsylvania, and Tamiment. The overall proposed increase in a residential customer's bill is approximately 41.21% for customers of the formally known territories of Penn Estates Utilities, Inc. and Utilities, Inc. of Pennsylvania and 100.95% for residential customers of the formally known territory Tamiment as follows:

Community Utilities of Pennsylvania Inc.
Wastewater Division
R-2021-3025207
Statement of Reasons for Rate Increase
Answer to 52 PA. Code 53.52 (b) (1)

Community Utilities of Pennsylvania
Average Bills

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Line	Name	W/WW	Class	Meter Size	12/31/20Average Usage	BFC	Usage Rate	PWAC Surcharge	Average Bill	12/31/22 Average Usage	Proposed BFC*	Proposed Usage*	Proposed Average Bill	Proposed Increase	Increase %	Average Bill	Proposed Average Bill	Proposed Increase	Increase %
1.	CUPA Consolidated Service Territori	WW	RES	5/8"	-	$ 55.39	$ -	$ -	$ 55.39	-	$ 78.22	$ -	$ 78.22	$ 22.83	41.21%	$ 55.39	$ 78.22	$ 22.83	41.21%
2.	Tamiment Service Territory	WW	RES	5/8"	2,816	$ 24.48	$ 5.13	$ -	$ 38.93	-	$ 78.22	$ -	$ 78.22	$ 39.29	100.95%	$ 38.93	$ 78.22	$ 39.29	100.95%

A billing analysis at present rates was prepared for the twelve months ended December 31, 2020, December 31, 2021, and December 31, 2022. The calculations are contained in supporting Schedule No. 1. The results of that analysis were used to prepare proof of revenues for the proposed rates contained in supporting Schedule No. 2. The allocation of the proposed revenues is shown in response to tariff Regulation (b) (4).

General Comments

The company is forecasting to invest an additional $5 million for system improvements and anticipates operating and maintenance expenses to increase 12.69% through the December 31, 2022 fully projected future test year. The proposed level of operating revenue will allow the Company enough revenue to meet debt obligations and recover reasonable levels of operating cost and capital investments. The increased revenue for Community Utilities of Pennsylvania Inc.'s wastewater division will also ensure continued safe and adequate service to its customers.

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Operating Revenue for the Base Year Ended December 31, 2020 Under Present Rates,
the Future Test Year Ended December 31, 2021, and the FPFTY Ended December 31, 2022. Under Present Rates
Answer to 52 Pa. Code 53.52 (b)(2)

Wastewater Operations Customer Classification	Base Year Ended 12/31/2020	Pro-forma Revenue at Present Rates Future Test Year Ended 12/31/2021	Pro-forma Revenue at Present Rates FPFTY Ended 12/31/2022
Flat/Base Rate Revenue			
Residential	$ 2,288,594	$ 2,292,055	$ 2,292,055
School	16,922	16,451	16,451
Availability	37,170	37,759	37,759
Commercial	13,857	10,216	10,216
Total Flat Rate Revenue	2,356,542	2,356,481	2,356,481
Volumetric Revenue			
Residential	$ 304,822	$ 304,822	$ 304,822
Commercial	3,027	3,027	3,027
Total Volumetric Revenue	307,849	307,849	307,849
Forfeited Discounts	(1,789)	7,335	7,335
Miscellaneous Service Revenues	1,180	673	673
Purchased Services	-	-	-
Accruals	(71,652)	-	-
Total Operating Revenues	$ 2,592,130	$ 2,672,338	$ 2,672,338

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Number of Customer Equivalents served at December 31, 2020,
and the Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (b)(3)

Wastewater Operations				
Customers	[1]	Total Customers 12/31/2020	Pro-forma Customers 12/31/2021	Pro-forma Customers 12/31/2022
Flat Rate Customers				
Residential		3,788	3,788	3,788
Commercial		15	15	15
School		58	58	58
Availability		110	110	110
Fire Hydrant (# of Hydrants)		0	0	0
Total Flat Rate Customers		3,971	3,971	3,971

[1] With the exception of fire hydrants, the Company uses Equivalent Residential Customers (ERCs) to count customers.

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Statement of Operating Revenue Under the Existing and Proposed Rates for the Base Year Ended
December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (b)(4)

Wastewater Operations	Schedule Number	Base Year Ended 12/31/2020	Change	Future Test Year Ended 12/31/2021	Change	Future Test Year Ended 12/31/2022	Change	Proposed FPFTY Ended 12/31/2022
Volumetric Revenue								
Residential	(b)(2)	$ 304,822	$ -	$ 304,822	$ -	$ 304,822	$ (304,822)	$ -
Commercial	(b)(2)	3,027	-	3,027	-	3,027	(3,027)	-
Total Volumetric Revenue		307,849	-	307,849	-	307,849	(307,849)	-
Flat Rate Revenue								
Residential	(b)(2)	$ 2,288,594	$ 3,460.86	$ 2,292,055	$ -	$ 2,292,055	$ 1,236,166	$ 3,528,221
School	(b)(2)	16,922	(472)	16,451	-	16,451	5,781	22,232
Availability	(b)(2)	37,170	590	37,759	-	37,759	65,879	103,638
Commercial	(b)(2)	13,857	(3,641)	10,216	-	10,216	(1,272)	8,943
Total Flat Rate Revenue		2,356,542	(62)	2,356,481	-	2,356,481	1,306,554	3,663,034
Forfeited Discounts	(b)(2)	$ (1,789)	$ 9,124	$ 7,335	$ -	$ 7,335	$ -	$ 7,335
Miscellaneous Service Revenues	(b)(2)	1,180	(507)	673	-	673	-	673
Purchased Services	(b)(2)	-	-	-	-	-	-	-
Accruals	(b)(2)	(71,652)	71,652	-	-	-	-	-
Total Operating Revenue		$ 2,592,130	$ 80,207	$ 2,672,338	$ -	$ 2,672,338	$ 998,705	$ 3,671,042

Going Level Adjustments [1]	
Residential	$ 3,461
School	(472)
Availability	590
Commercial	(3,641)
See supporting Schedule No. 1	$ (62)

Future Test Year Ended 12/31/22 Adjustments [1]	
Residential	$ -
School	-
Availability	-
Commercial	-
See supporting Schedule No. 2	$ -

FPFTY Ended 12/31/22 Adjustments	
Residential	$ 1,236,166
School	5,781
Availability	65,879
Commercial	(1,272)
See supporting Schedule No. 2	$ 1,306,554

[1] Adjustment to reflect revenues based on the billing analysis at present rates.

Community Utilities of Pennsylvania Inc.
Wastewater Division
Whose Bills will be Decreased Under the Proposed Tariff
for the Twelve Months Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (b)(5)

Under the proposed tariff, no Community Utilities of Pennsylvania water customer will receive a bill decrease

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Statement of Net Operating Income Under the Existing and Proposed Rates for the Base Year Ended
December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and the FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1a

Wastewater Operations	Schedule Number	Per Books Base Year Ended 12/31/2020	Change	Future Test Year Ended 12/31/2021	Change	Future Test Year Ended 12/31/2022	Change	Proposed FPFTY Ended 12/31/2022
Operating Revenue								
Gross Operating Revenue	(b)(2)	$ 2,592,130	$ 80,207	$ 2,672,338	$ -	$ 2,672,338	$ 998,705	$ 3,671,042
Allowance for Uncollectible Accounts	Sup. Sch. No.3	(63,048)	43,664	(19,384)	-	(19,384)	(7,266)	(26,650)
Net Operating Revenue		2,529,082	123,872	2,652,954	-	2,652,954	991,439	3,644,392
Operating Expenses								
Operating Expenses	(c)(1) - Sheet No. 1b	$ 1,936,518	$ (177,942)	$ 1,758,576	$ 47,139	$ 1,805,715	$ -	$ 1,805,715
Depreciation	Sup. Sch. No. 4	447,020	134,485	581,505	83,551	665,056	-	665,056
Amortization of CIAC	Sup. Sch. No. 4	(80,024)	(6,738)	(86,762)	-	(86,762)	-	(86,762)
Amortization of PAA	Sup. Sch. No. 4	(51,308)	(7,265)	(58,573)	-	(58,573)	-	(58,573)
Taxes Other than Income	Sup. Sch. No. 5	78,210	12,716	90,927	(52,461)	38,466	6,612	45,078
Income Taxes								
Federal Income Tax	Sup. Sch. No. 6	$ 8,785	$ 6,156	$ 14,941	$ (26,792)	$ (11,851)	$ 186,153	$ 174,302
State Income Tax	Sup. Sch. No. 6	787	7,109	7,896	(14,160)	(6,263)	98,384	92,121
Total Operating Expenses		2,339,988	(31,478)	2,308,510	37,277	2,345,787	291,149	2,636,936
Net Operating Income		$ 189,094	$ 155,349	$ 344,444	$ (37,277)	$ 307,167	$ 700,289	$ 1,007,456

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Statement of Operating Expenses for the Base Year Ended December 31, 2020,
the Future Test Year Ended December 31, 2021, and the FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1b

Wastewater Operations

NARUC Acct. No.	Account Description	Per Books Base Year Ended 12/31/20	Per Book & Going Level Adjustments No.	Per Book & Going Level Adjustments Amount	Pro Forma Expenses at Going Rates 12/31/2021	Per Book & Going Level Adjustments No.	Per Book & Going Level Adjustments Amount	Pro Forma Expenses at Going Rates 12/31/2022
701	Wastewater - Salaries & Wages - Employees	$ 451,679	1,2	$ (7,527)	$ 444,152	1,2	$ 24,956	$ 469,108
704	Wastewater - Employee Pensions & Benefits	90,201	3	33,908	124,110	3	8,488	132,598
711	Wastewater - Sludge Hauling & Sewer Rodding	353,341	4	(128,589)	224,752	4	2,036	226,788
615	Wastewater - Purchased Power	142,271	5	(19,293)	122,978	5	2,659	125,637
610	Wastewater - Purchased Water	-	6	-	-	6	-	-
718	Wastewater - Chemicals	83,077	7	35,002	118,079	7	11,126	129,205
720	Wastewater - Materials, Supplies, and Other Maintenance Expense	148,816	8	(4,799)	144,017	8	(9,460)	134,556
731	Wastewater - Engineering Fees	24,055	9	(12,551)	11,504	9	280	11,784
732	Wastewater - Contractual Services - Accounting	-	10	-	-	10	-	-
733	Wastewater - Contractual Services - Legal	6,851	11	(2,402)	4,449	11	68	4,517
736	Wastewater - Contractual Services - Other	431,623	12	(106,394)	325,229	12	(2,794)	322,435
741	Wastewater - Rental of Building/Real Property	3,038	13	(2,278)	759	13	(759)	-
750	Wastewater - Transportation Expenses	28,899	14	(2,039)	26,860	14	(125)	26,736
759	Wastewater - Insurance - Other	39,106	15	14,393	53,499	15	6,571	60,070
760	Wastewater - Advertising Expense	-	16		-	16		-
675	Wastewater - Office Utilities, Supplies & Other Office Expenses	58,370	17	(2,971)	55,399	17	(1,886)	53,513
766	Wastewater - Regulatory Commission Expenses - Amortization of Rate Case Expense	31,176	18	12,288	43,464	18	-	43,464
767	Wastewater - Regulatory Commission Expenses - Other	15,180	19	(15,180)	-	19		-
775	Wastewater - Testing and Miscellaneous Expense	$ 28,835	20	$ 30,490	$ 59,325	20	$ 5,978	$ 65,303
	Total Operating and Maintenance Expenses	$ 1,936,518		$ (177,942)	$ 1,758,576		$ 47,139	$ 1,805,715

Community Utilities of Pennsylvania Inc.
Wastewater Division
Adjustments to (c)(1) Sheet 1b
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1c

Going Level Adjustments [1]		2021		2022
1 An adjustment is required to reflect the forecasted level of salary expense.				
Going Level Adjustment	$	25,531	$	22,597
2 An adjustment is required to reflect the forecasted level of Capitalized Time Charged to Plant for employees allocated to Community Utilities of PA Inc.				
Going Level Adjustment	$	(33,058)	$	2,359
3 An adjustment is required to reflect the forecasted level of Pension and Benefits for Employees Allocated to Community Utilities of PA Inc.				
Going Level Adjustment	$	33,908	$	8,488
4 An adjustment is required to reflect the forecasted level of Sludge Hauling and Sewer Rodding expense for territories providing wastewater service to Community Utilities of PA Inc. customers.				
Going Level Adjustment	$	(128,589)	$	2,036
5 An adjustment is required to reflect the forecasted level of Electric expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	(19,293)	$	2,659
6 An adjustment is required to reflect the forecasted level of Purchased Water expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	-	$	-
7 An adjustment is required to reflect the forecasted level of Chemical expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	35,002	$	11,126
8 An adjustment is required to reflect the forecasted level of Maintenance expense to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	(4,799)	$	(9,460)
9 An adjustment is required to reflect the forecasted level of Engineering fees to be incurred by Community Utilities of PA Inc.				
Going Level Adjustment	$	(12,551)	$	280

[1] "Adjustment" refers to the change between periods and is not meant to imply there was an "adjustment" to the base period.

10	An adjustment is required to reflect the forecasted level of Accounting fees to be allocated to Community Utilities of PA Inc.			
	Going Level Adjustment	$ -	$ -	
11	An adjustment is required to reflect the forecasted level of outside Legal expense to be allocated to Community Utilities of PA Inc.			
	Going Level Adjustment	$ (2,402)	$ 68	
12	An adjustment is required to reflect the forecasted level of other Contractual services expenses to be allocated to Community Utilities of PA Inc.			
	Going Level Adjustment	$ (106,394)	$ (2,794)	
13	An adjustment is required to reflect the forecasted level of Rent expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ (2,278)	$ (759)	
14	An adjustment is required to reflect the forecasted level of Transportation expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ (2,039)	$ (125)	
15	An adjustment is required to reflect the forecasted level of Insurance expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ 14,393	$ 6,571	
16	An adjustment is required to reflect the forecasted level of Advertising expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ -	$ -	
17	An adjustment is required to reflect the forecasted level of Office Utilities expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ (2,971)	$ (1,886)	
18	An adjustment is required to normalize Estimated Rate Case expense for this filing over three years.			
	Going Level Adjustment	$ 12,288	$ -	
19	An adjustment is required to eliminate outside regulatory commission expense.			
	Going Level Adjustment	$ (15,180)	$ -	
20	An adjustment is required to reflect the forecasted level of Testing, Meter Reading, and other miscellaneous expense to be incurred by Community Utilities of PA Inc.			
	Going Level Adjustment	$ 30,490	$ 5,978	

[1] "Adjustment" refers to the change between periods and is not meant to imply there was an "adjustment" to the base period.

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Statement of the Calculation of the Rate of Return Under the Present and Proposed Rates for the Base Year Ended December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 2

Wastewater Operations	Supporting Schedule No.	Pro-forma Present 12/31/2020	Future Test Year 12/31/2021	Future Test Year 12/31/2022	Proposed FPFTY 12/31/2022
Utility Plant In Service	(c)(3)	$ 21,800,965	$ 21,800,965	$ 21,800,965	$ 21,800,965
Less:					
Accumulated Depreciation	(c)(4)	(9,209,332)	(9,790,837)	(10,455,892)	(10,455,892)
Net Plant In Service		12,591,633	12,010,128	11,345,073	11,345,073
Less:					
Contributions in Aid of Construction (Net)		(1,948,583)	(1,861,821)	(1,775,060)	(1,775,060)
Net Plant Acquisition Adjustment		(1,174,754)	(1,116,181)	(1,057,608)	(1,057,608)
Customer Deposits		(1,100)	(1,825)	(1,825)	(1,825)
Accumulated Deferred Income Taxes		(734,226)	(750,321)	(774,535)	(774,535)
Add:					
Proforma Level of Plant		-	2,294,002	5,272,944	5,272,944
Deferred Charges		105,639	99,721	66,921	66,921
Cash Working Capital	11	247,679	226,588	226,180	226,180
Total Rate Base		$ 9,086,288	$ 10,900,290	$ 13,302,090	$ 13,302,090
Net Operating Income	(c)(1) Sheet 1a	189,094	344,444	307,167	1,007,456
Percent Pro-forma Return		2.08% [1]	3.16% [1]	2.31% [1]	7.57% [1]

[1] Net Operating Income over Total Rate Base.

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Assets and other Debits as of the Base Year Ended December 31, 2020 and Pro-forma Balance Sheets
for the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(2) - Sheet No. 1

Wastewater Operations

Account	Per Books Base Year Ended 12/31/2020		Future Test Year Ended 12/31/2021		Pro-forma FPFTY Ended 12/31/2022	
Net Utility Plant						
Utility Plant in Service	$ 20,845,060		$ 24,094,967		$ 27,073,908	
Accumulated Depreciation	(9,209,332)	11,635,729	(9,790,837)	14,304,130	(10,455,892)	16,618,016
Purchased Acquisition Adjustment (Net)		(1,174,754)		(1,116,181)		(1,057,608)
Work in Progress (Net)		955,905		-		-
Current & Accrued Assets						
Cash	-		-		-	
Accounts Receivable (Net)	466,856		466,856		466,856	
Other Current Assets	(4,276,792)		(4,276,792)		(4,276,792)	
Deferred Charges	105,639	(3,704,296)	173,858	(3,636,078)	130,393	(3,679,542)
Total Assets		$ 7,712,583		$ 9,551,872		$ 11,880,866

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Assets and other Debits as of the Base Year Ended December 31, 2020 and Pro-forma Balance Sheets for the Future Test Year Ended December 31, 2021 and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(2) - Sheet No. 2

Wastewater Operations

Account	Per Books Base Year Ended 12/31/2020			Future Test Year Ended 12/31/2021			Pro-forma FPFTY Ended 12/31/2022		
Equity Capital									
Common Stock and Paid In Capital			$ 1,241,176			$ 1,241,176			$ 1,241,176
Retained Earnings			2,172,334			2,321,663			2,384,180
Current and Accrued Liabilities									
Accounts Payable-Trade	126,143			126,143			126,143		
Taxes Accrued	20,175			20,175			20,175		
Customer Deposits	(1,100)			(1,100)			(1,100)		
Customer Deposits - Interest	(226)			(226)			(226)		
Advances from Utilities, Inc.	-			-			-		
A/P - Assoc. Companies	1,471,270	1,616,263		3,231,897	3,376,890		5,560,923	5,705,916	
Contributions in Aid of Construction		1,948,583			1,861,821			1,775,060	
Accumulated Deferred Income Tax									
Deferred Tax - Federal	641,594			652,124			667,965		
Deferred Tax - State	92,633	734,226	4,299,072	98,198	750,321	5,989,032	106,570	774,535	8,255,510
Total Capitalization & Liabilities			$ 7,712,583			$ 9,551,872			$ 11,880,866

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Original Cost Utility Plant in Service for the Base Year Ended December 31, 2020
Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(3)

Wastewater Operations

NARUC Acct. No.	Account Description	Per Books Base Year Ended 12/31/2020	Future Test Year 2021 GL Additions & Pro-forma Plant	Future Test Year 2021 Retirements [1]	Pro Forma Plant Future Test Year Ended 12/31/2021	FPFTY 2022 GL Additions & Pro-forma Plant	FPFTY 2022 Retirements [1]	Pro Forma Plant FPFTY Ended 12/31/2022
351.1	WASTEWATER - ORGANIZATION	$ 278,385	$ 8,269	$ -	$ 286,654	$ 8,624	$ -	$ 295,278
352.1	WASTEWATER - FRANCHISES INTANG PLT	-	-	-	-	-	-	-
353.1	WASTEWATER - LAND & LAND RIGHTS INTANG PLT	-	-	-	-	-	-	-
353.3	WASTEWATER - LAND AND RIGHTS COLLECTIONS	15,000	2,109	-	17,109	2,200	-	19,309
353.7	WASTEWATER - LAND & LAND RIGHTS GEN PLT	52,692	-	-	52,692	-	-	52,692
354.2	WASTEWATER - STRUCT/IMPRV COLL PLT	73,130	397,564	-	470,694	1,092,112	-	1,562,805
354.3	WASTEWATER - STRUCT/IMPRV PUMP PLT LS	867,337	12,988	(1,798)	878,527	540,111	(1,875)	1,416,763
354.4	WASTEWATER - STRUCT/IMPRV TREAT PLT	2,362,847	152,575	(1,447)	2,513,976	104,741	(1,509)	2,617,208
354.5	WASTEWATER - STRUCT/IMPRV RECLAIM WTP	-	-	-	-	-	-	-
354.6	WASTEWATER - STRUCT/IMPRV RECLAIM WTR DIST PLT	-	-	-	-	-	-	-
354.7	WASTEWATER - STRUCT/IMPRV GEN PLT	397,699	13,439	-	411,138	7,164	-	418,302
355.3	WASTEWATER - POWER GEN EQUIP PUMP PLT	136,315	-	-	136,315	-	-	136,315
355.4	WASTEWATER - POWER GEN EQUIP TREAT PLT	240,533	152,830	-	393,364	729	-	394,093
360.2	WASTEWATER - SEWER FORCE MAIN	479,075	21,551	(48)	500,579	22,477	(50)	523,006
361.2	WASTEWATER - SEWER GRAVITY MAIN	6,738,439	351,578	(715)	7,089,303	538,352	(745)	7,626,910
361.2	WASTEWATER - MANHOLES	131,511	8,801	(151)	140,161	9,179	(158)	149,183
362.2	WASTEWATER - SPECIAL COLL STRUCTURES	60,777	-	-	60,777	-	-	60,777
363.2	WASTEWATER - SERVICES TO CUSTOMERS	310,846	11,456	(3,286)	319,015	11,948	(3,427)	327,536
364.2	WASTEWATER - FLOW MEASURE DEVICES	127,375	15,332	(2,238)	140,469	15,991	(2,335)	154,125
365.2	WASTEWATER - FLOW MEASURE INSTALL	87,794	40	-	87,834	42	-	87,875
370.3	WASTEWATER - RECEIVING WELLS	170,222	-	-	170,222	-	-	170,222
371.3	WASTEWATER - PUMPING EQUIPMENT PUMP PLT	218,233	78,148	(22,715)	273,666	81,506	(23,691)	331,481
371.5	WASTEWATER - PUMPING EQUIPMENT RECLAIM WTP	8,388	17,373	(6,875)	18,886	18,119	(7,170)	29,835
380.4	WASTEWATER - TREAT/DISP EQUIP LAGOON	324,679	5,873	-	330,552	6,125	-	336,677
380.4	WASTEWATER - TREAT/DISP EQUIP TRT PLT	5,697,337	583,977	(82,910)	6,198,404	449,899	(86,472)	6,561,832
380.5	WASTEWATER - TREAT/DISP EQUIP RCL WTP	-	-	-	-	-	-	-
381.4	WASTEWATER - PLANT SEWERS TRTMT PLT	116,564	7,829	(4,147)	120,246	8,166	(4,325)	124,086
381.5	WASTEWATER - PLANT SEWERS RECLAIM WTP	-	-	-	-	-	-	-
382.4	WASTEWATER - OUTFALL LINES	123,638	638	(114)	124,161	665	(119)	124,707
398.7	WASTEWATER - OTHER PLT TANGIBLE	260,635	236,169	-	496,804	895	-	497,699
389.2	WASTEWATER - OTHER PLT COLLECTION	1,450	-	-	1,450	-	-	1,450
389.3	WASTEWATER - OTHER PLT PUMP	26,142	511	-	26,653	533	-	27,186
389.4	WASTEWATER - OTHER PLT TREATMENT	15,315	51	-	15,366	53	-	15,419
389.5	WASTEWATER - OTHER PLT RECLAIM WTR TRT	-	-	-	-	-	-	-
354.7	WASTEWATER - OFFICE STRUCT & IMPRV	113,930	72,940	-	186,870	25,944	-	212,814
390.7	WASTEWATER - OFFICE FURN & EQPT	58,314	2,916	-	61,230	3,036	-	64,266
392.7	WASTEWATER - STORES EQUIPMENT	9,585	395	(35)	9,945	412	(37)	10,320
393.7	WASTEWATER - TOOL SHOP & MISC EQPT	206,678	26,003	(3,662)	229,020	27,120	(3,819)	252,321
394.7	WASTEWATER - LABORATORY EQPT	31,678	5,450	(366)	36,763	5,684	(381)	42,065
395.7	WASTEWATER - POWER OPERATED EQUIP	46,913	1,410	-	48,324	1,471	-	49,795
396.7	WASTEWATER - COMMUNICATION EQPT	189,341	707	-	190,048	102,553	-	292,601
397.7	WASTEWATER - MISC EQUIP SEWER	20,398	275	-	20,673	287	-	20,961
398.7	WASTEWATER - OTHER TANGIBLE PLT SEWER	-	-	-	-	-	-	-
374.5	WASTEWATER - REUSE DIST RESERVOIRS	-	-	-	-	-	-	-
375.6	WASTEWATER - REUSE TRANMISSION & DIST SYS	3,251	-	-	3,251	-	-	3,251
341.5	WASTEWATER - TRANSPORTATION EQPT	255,332	18,974	-	274,306	-	-	274,306
340.5	WASTEWATER - DESKTOP COMPUTER	63	-	-	63	-	-	63
340.5	WASTEWATER - MAINFRAME COMPUTER	13,968	-	-	13,968	-	-	13,968
340.5	WASTEWATER - MINI COMPUTERS	131,627	-	-	131,627	-	-	131,627
340.5	WASTEWATER - COMP SYS COST	427,612	216,269	-	643,881	28,847	-	672,728
340.5	WASTEWATER - MICRO SYS COST	7,226	-	-	7,226	-	-	7,226
348.5/398.7	WASTEWATER - OTHER PLANT	6,785	-	-	6,785	-	-	6,785
	Total Plant in Service	$ 20,845,059	$ 2,424,442	$ (130,505)	$ 23,138,995	$ 3,114,985	$ (136,113)	$ 26,117,868

[1] Per Books and General Ledger Additions amounts are net of retirements.

Community Utilities of Pennsylvania Inc.
Wastewater Division
Reserve for Depreciation of Utility Plant
the Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(4)

Wastewater Operations	Adjustment	[1]	Base Year Ended 12/31/2021 Total	Adjustment	[1]	Future Test Year Ended 12/31/2022 Total
Per Books Reserve for Depreciation			$ 9,209,332			$ 9,790,837
Accumulated Depreciation Adjustments:						
Pro-forma Plant A/D	$ 511,831			$ 580,011		
Computers	45,932			63,659		
Vehicles	23,742		$ 581,505	21,385		$ 665,056
Pro-forma Reserve for Depreciation			$ 9,790,837			$ 10,455,892

[1] Supporting Schedules No. 9 and 10 calculate additional Accumulated Depreciation associated with Pro-forma Capital Projects and General Ledger Additions.

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Statement of Operating Income Setting Forth the Operating Revenues at Present Rates by Detail Accounts for the Base Year Ended December 31, 2020, the Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(5)

Wastewater Operations	Per Books for the Base Year Ended 12/31/2020	Future Test Year Ended 12/31/2021	Future Test Year Ended 12/31/2022	Pro Forma FPFTY Ended 12/31/2022
Operating Revenue				
Gross Operating Revenue	$ 2,589,134	$ 2,672,338	$ 2,672,338	$ 3,671,042
Allowance for Uncollectible Accounts	(63,048)	(19,384)	(19,384)	(26,650)
Net Operating Revenue	2,526,086	2,652,954	2,652,954	3,644,392
Operating Expenses				
Operating Expenses	$ 1,936,518	$ 1,758,576	$ 1,805,715	$ 1,805,715
Depreciation	447,020	581,505	665,056	665,056
Amortization of PAA	(51,308)	(58,573)	(58,573)	(58,573)
Taxes Other than Income	78,210	90,927	38,466	45,078
Amortization of CIAC	(80,024)	(86,762)	(86,762)	(86,762)
Income Taxes				
Federal Income Tax	$ 8,785	$ 14,941	$ (11,851)	$ 174,302
State Income Tax	787	7,896	(6,263)	92,121
Total Operating Expenses	$ 2,339,988	$ 2,308,510	$ 2,345,787	$ 2,636,936
Net Operating Income	$ 186,098	$ 344,444	$ 307,167	$ 1,007,456
Non-Operating Income & Expenses				
Interest Expense	179,780	288,237	351,748	351,748
Other Income	733	-	-	-
Total Non-Operating Expenses	$ 180,513	$ 288,237	$ 351,748	$ 351,748
Net Income (Loss)	$ 5,585	$ 56,206	$ (44,582)	$ 655,708

Community Utilities of Pennsylvania Inc.
Wastewater Division
Statement Detailing Major Changes in the Operating or Financial Condition Occurring between December 31, 2020 and December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(6)

There were no major accounting changes between December 31, 2020 and December 31, 2022 which would effect the operating or financial condition of Community Utilties of Pennsylvania Inc.

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Wastewater Division

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Community Utilities of Pennsylvania Inc.
Wastewater Operations
Base Year / Present Revenues
TTM Period 12/31/2020

	A	B	C	D	E	F	G	H	I	J	K	L
	SEWER											
Line	Bill code			Description	Gallonage	Usage Charge	Vol Revenue	Units	BFC	Base Revenue	Out of Period Billing Adjustments	Revenues
1												
2	Consolidated:	RES		Unmetered-Household (Flat)				37,922	$ 55.39	$ 2,100,504	(4,920)	$ 2,095,584
3	Consolidated:	SCHL		Unmetered-School (Flat)				4,740	$ 3.57	$ 16,922		$ 16,922
4	Consolidated:	COML		Unmetered-Commercial (5/8")				66	$ 55.39	$ 3,674		$ 3,674
5	Consolidated:	COML		Unmetered-Commercial (1")				7	$ 55.39	$ 388		$ 388
6	Consolidated:	AVB		Unmetered-Other Availability				181	$ 39.36	$ 7,125		$ 7,125
7	Tamiment:	RES		Metered-Residential (Flat) - Quarterly	22,201,133	$ 13.73	$ 304,822	2,628	$ 73.44	$ 193,010		$ 497,831
8	Tamiment:	COML		Metered-Commercial (5/8") - Monthly	220,500	$ 13.73	$ 3,027	36	$ 163.24	$ 5,877		$ 8,904
9	Tamiment:	COML		Metered-Commercial (6") - Monthly	-	$ 13.73	$ -	24	$ 163.24	$ 3,918		$ 3,918
10	Tamiment:	AVB		Metered-Other Availability - Quarterly	-	$ 13.73	$ -	1,312	$ 22.90	$ 30,045		$ 30,045
11												
12												
13					22,421,633		$ 307,849	46,917		$ 2,361,462	$ (4,920)	$ 2,664,391
14												
15												
16		Sewer Total			22,421,633		$ 307,849	46,917		$ 2,361,462	$ (4,920)	$ 2,664,391

	A	B	C	D	E	F	G	H	I	J	K	L
	SEWER											
Line	Bill code			Description	Gallonage	Usage Charge	Vol Revenue	Units	BFC	Base Revenue	Out of Period Billing Adjustments	Revenues
1												
2	Consolidated:	RES		Unmetered-Household (Flat)				38,588	$ 55.39	$ 2,137,389	(4,920)	$ 2,132,470
3	Consolidated:	COML		Unmetered-School (Flat)				4,608	$ 3.57	$ 16,451		$ 16,451
4	Consolidated:	COML		Unmetered-Commercial (5/8")				66	$ 55.39	$ 3,674		$ 3,674
5	Consolidated:	COML		Unmetered-Commercial (1")				12	$ 55.39	$ 665		$ 665
6	Consolidated:	RES		Unmetered-Other Availability				196	$ 39.36	$ 7,715		$ 7,715
7	Tamiment:	RES		Metered-Residential (Flat) - Quarterly	22,201,133	$ 13.73	$ 304,822	2,173	$ 73.44	$ 159,585		$ 464,407
8	Tamiment:	COML		Metered-Commercial (5/8") - Monthly	220,500	$ 13.73	$ 3,027	24	$ 163.24	$ 3,918		$ 6,945
9	Tamiment:	COML		Metered-Commercial (6") - Monthly	-	$ 13.73	$ -	12	$ 163.24	$ 1,959		$ 1,959
10	Tamiment:	RES		Metered-Other Availability - Quarterly	-	$ 13.73	$ -	1,312	$ 22.90	$ 30,045		$ 30,045
11												
12												
13					22,421,633		$ 307,849	46,991		$ 2,361,400	$ (4,920)	$ 2,664,330
14												
15												
16		Sewer Total			22,421,633		$ 307,849	46,991		$ 2,361,400	$ (4,920)	$ 2,664,330

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Proforma Future Test Year
Future Test Year Ended December 31, 2022

	A	B	C	D	E	F	G	H	I	J	K	L
	SEWER											
Line	Bill code			Description	Gallonage	Usage Charge	Vol Revenue	Units	BFC	Base Revenue	Out of Period Billing Adjustments	Revenues
1												
2	Consolidated:	RES		Unmetered-Household (Flat)				38,588	$ 55.39	$ 2,137,389	(4,920)	$ 2,132,470
3	Consolidated:	COML		Unmetered-School (Flat)				4,608	$ 3.57	$ 16,451		$ 16,451
4	Consolidated:	COML		Unmetered-Commercial (5/8")				66	$ 55.39	$ 3,674		$ 3,674
5	Consolidated:	COML		Unmetered-Commercial (1")				12	$ 55.39	$ 665		$ 665
6	Consolidated:	RES		Unmetered-Other Availability				196	$ 39.36	$ 7,715		$ 7,715
7	Tamiment:	RES		Metered-Residential (Flat) - Quarterly	22,201,133	$ 13.73	$ 304,822	2,173	$ 73.44	$ 159,585		$ 464,407
8	Tamiment:	COML		Metered-Commercial (5/8") - Monthly	220,500	$ 13.73	$ 3,027	24	$ 163.24	$ 3,918		$ 6,945
9	Tamiment:	COML		Metered-Commercial (6") - Monthly	-	$ 13.73	$ -	12	$ 163.24	$ 1,959		$ 1,959
10	Tamiment:	RES		Metered-Other Availability - Quarterly	-	$ 13.73	$ -	1,312	$ 22.90	$ 30,045		$ 30,045
11												
12												
13					22,421,633		$ 307,849	46,991		$ 2,361,400	$ (4,920)	$ 2,664,330
14												
15												
16		Sewer Total			22,421,633		$ 307,849	46,991		$ 2,361,400	$ (4,920)	$ 2,664,330

	A	B	C	D	E	F	G	H	I	J
	Sewer Residential									
1	**Description**	**# of bills (1 per month)**					**Proposed Charge**	**Revenue**		**Total Revenue**
2										
3	Availability	4,524					$ 22.91	$ 103,638		$ 103,638
4	Residential	45,107					$ 78.22	$ 3,528,221		$ 3,528,221
5	School (Pupils*Bills)	13,824					$ 1.61	$ 22,232		$ 22,232
6	Commercial	114					$ 78.22	$ 8,943		$ 8,943
7										
8	**Total Sewer**									**$ 3,663,034**
9	**Sewer Revenue Requirement from Rates**									**$ 3,663,034**

Community Utilities of Pennsylvania Inc. **Section 2**

Wastewater Operations **Supporting Schedule No. 3**

Uncollectible Accounts **Page 1 of 1**

Future Test Year Ended December 31, 2022

Line	A	C
		Sewer
1	**FORECAST Revenues**	$ 2,664,330
2		
3	Uncollectible %	-0.73%
4		
5		
6	Uncollectible Accounts	$ (19,384)
7		
8		
9	**PROPOSED Revenues**	$ 3,663,034
10		
11	Uncollectible %	-0.73%
12		
13		
14	Uncollectible Accounts	$ (26,650)

Community Utilities of Pennsylvania Inc.
Wastewater Division
Depreciation Expense
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line	A	Source	B	Sewer
1.	**December 31, 2020**			
2.	Utility Plant	[1]	$	427,535
3.	Transportation	[1]		17,000
4.	Computers	[1]		2,485
5.				
6.	CIAC	[1]		(80,024)
7.				
8.	PAA	[1]		(51,308)
9.				
10.	**Per Books December 31, 2020**		$	315,688
11.				
12.				
13.	**December 31, 2021**			
14.	Utility Plant	[2]	$	511,831
15.	Transportation	[3]		23,742
16.	Computers	[4]		45,932
17.				
18.	CIAC	[2]		(86,762)
19.				
20.	PAA	[5]		(58,573)
21.				
22.	**Future Period December 31, 2021**		$	436,170
23.				
24.				
25.	**December 31, 2022**			
26.	Utility Plant	[2]	$	580,011
27.	Transportation	[3]		21,385
28.	Computers	[4]		63,659
29.				
30.	CIAC	[2]		(86,762)
31.				
32.	PAA	[5]		(58,573)
33.				
34.	**FPFTY December 31, 2022**		$	519,721
35.				
36.				
37.	Source:			
38.	[1] Trial Balance			
39.	[2] wp-r			
40.	[3] wp-p2			
41.	[4] wp-p3			
42.	[5] wp-v			

Community Utilities of Pennsylvania Inc.
Wastewater Division
Calculation of Taxes Other Than Income Taxes
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line No.	A	B
1.	**Test Year 12/31/2020**	Sewer
2.		
3.	Utility/Commission Tax	$ 11,054
4.	Real Estate Tax	33,296
5.	Personal Property Tax	-
6.	Gross Receipts Tax	-
7.	Sales/Use Tax	-
8.		
9.	Payroll Taxes	33,860
10.		
11.	Total	$ 78,210
12.		
13.	**Forecast 12/31/2021**	
14.		
15.	Utility/Commission Tax	$ 17,118
16.	Real Estate Tax	36,800
17.	Personal Property Tax	-
18.	Gross Receipts Tax	-
19.	Sales/Use Tax	-
20.		
21.	Payroll Taxes	37,008
22.		
23.	Total	$ 90,927
24.		
25.	**Forecast 12/31/2022**	
26.		
27.	Utility/Commission Tax	$ 24,251
28.	Real Estate Tax	41,350
29.	Personal Property Tax	-
30.	Gross Receipts Tax	-
31.	Sales/Use Tax	-
32.	Company Adjustment	(65,601)
33.	Payroll Taxes	38,466
34.		
35.	Total	$ 38,466
36.		
37.	**Pro Forma Proposed**	
38.		
39.	Proposed Revenue Increase	$ 998,705
40.		
41.	Gross Receipts Increase	0.66%
42.	(Utility/Commission Tax)	
43.		
44.	**Adjustment**	**$ 6,612**

Community Utilities of Pennsylvania Inc.
Watewater Operations
Calculation of Income Taxes
Future Test Year Ended December 31, 2022

	A	B	C	D	E
Line No.	**SEWER**	12/31/2021 Forecast	12/31/2022 Forecast	12/31/2022 Future Test Year	Pro Forma Proposed
1	State Income Taxes				
2					
3	Total Revenue	$ 2,652,954	$ 2,652,954	$ 2,652,954	$ 3,644,392
4					
5	Maintenance Expense	1,001,879	1,016,598	1,016,598	1,016,598
6	General Expense	756,697	789,116	789,116	789,116
7	Depreciation & Amortization	436,170	519,721	519,721	519,721
8	Taxes Other Than Income	90,927	38,466	38,466	45,078
9	Other Income	-	-	-	-
10	Interest Expense	288,237	351,748	351,748	351,748
11					
12	Taxable Income profit/(loss)	$ 79,044	$ (62,696)	$ (62,696)	$ 922,131
13	State Tax Rate	9.99%	9.99%	9.99%	9.99%
14					
15	Total State Income Taxes	$ 7,896	$ (6,263)	$ (6,263)	$ 92,121
16					
17	Federal Taxes				
18					
19	Taxable Income before taxes	$ 79,044	$ (62,696)	$ (62,696)	$ 922,131
20					
21	Less: State I/T	7,896	(6,263)	(6,263)	92,121
22					
23	Federal Taxable Income	$ 71,147	$ (56,432)	$ (56,432)	$ 830,010
24	Federal Tax Rate	21%	21%	21%	21%
25					
26	Total Federal Taxes	$ 14,941	$ (11,851)	$ (11,851)	$ 174,302

Community Utilities of Pennsylvania Inc.
Wastewater Division
Salary Expense
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line	A	B	
1.	**December 31, 2020**		Sewer
2.	LEADERSHIP OPS	$	52,263
3.	**General Salaries**	$	52,263
4.			
5.	OPERATIONS FIELD		415,234
6.	CAPITALIZED TIME ADJUSTMENT		(15,818)
7.	**Maintenance Salaries**	$	399,416
8.			
9.	**Per Books December 31, 2020**	$	451,679
10.			
11.			
12.	**December 31, 2021**		
13.	LEADERSHIP OPS	$	169,384
14.	COMPANY ADJUSTMENT		(11,583)
15.	**General Salaries**	$	157,801
16.			
17.	OPERATIONS FIELD		335,227
18.	CAPITALIZED TIME ADJUSTMENT		(48,876)
19.	**Maintenance Salaries**	$	286,351
20.			
21.	**Future Period December 31, 2021**	$	444,152
22.			
23.			
24.	**December 31, 2022**		
25.	LEADERSHIP OPS	$	175,666
26.	COMPANY ADJUSTMENT		(11,844)
27.	**General Salaries**	$	163,822
28.			
29.	OPERATIONS FIELD		351,803
30.	CAPITALIZED TIME ADJUSTMENT		(46,517)
31.	**Maintenance Salaries**	$	305,286
32.			
33.	**FPFTY December 31, 2022**	$	469,108

Community Utilities of Pennsylvania Inc.
Wastewater Division
Rate Case Expense
Future Test Year Ended December 31, 2022

	A	B	C	D	E	F
Line No.	**Description**				**Total**	
1	Legal Fees				$ 140,000	
2						
3	Customer Notices (2):					
4	Postage	0	=	customers x $0.49	$ -	
5	Stock	0	=	notices x (.085)	$ -	
6						
7	Travel/Publications/Misc				$ 7,200	
8						
9	External Consultants - Ready to File - (ROE - ScottMadden, Inc. & COSS - Baker Tilly)				$ 38,000	
10	External Consultants - Post Filing - (ROE - ScottMadden, Inc. & COSS - Baker Tilly)				$ 64,930	
11						Allocated S
12	Cost of Current Case				$ 250,130	$ 140,084
13						
14	Unamortized Rate Case Expense as of 1/1/2022 - Docket No. 17-1106				$ 62,299	$ 33,774
15						
16	Total Rate Case Expense				$ 312,429	$ 173,858
17						
18	Amortized Over 4 Years				4	4
19						
20						**Sewer**
21	**Total Annual Regulatory Expense**				**$ 78,107**	**$ 43,464**

Community Utilities of Pennsylvania Inc.
Wastewater Division
Net Plant In Service
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line	A		B
1.	**December 31, 2020**	Source	Sewer
2.	Utility Plant In Service (UPIS)	[1]	$ 20,965,136
3.	Transportation	[1]	255,332
4.	Computers	[1]	580,496
5.	**Total Gross Plant In Service**		$ 21,800,964
6.			
7.	Accumulated Depreciation UPIS	[1]	$ (8,552,512)
8.	Accumulated Depreciation Transportation	[1]	(186,457)
9.	Accumulated Depreciation Computers	[1]	(470,363)
10.	**Total Accumulated Depreciation**		$ (9,209,332)
11.			
12.	**Per Books December 31, 2020**		$ 12,591,632
13.			
14.			
15.	**Additions**		
16.	Utility Plant In Service (UPIS)	[2]	$ 2,189,198
17.	Transportation	[3]	18,974
18.	Computers	[4]	216,269
19.	**Total Additions**		$ 2,424,442
20.			
21.	**Retirements**		
22.	Utility Plant In Service (UPIS)	[2]	$ (130,505)
23.	Transportation	[3]	0
24.	Computers	[4]	0
25.	**Total Retirements**		$ (130,505)
26.			
27.	**Depreciation**		
28.	Utility Plant In Service (UPIS)	[2]	$ 511,831
29.	Transportation	[3]	23,742
30.	Computers	[4]	45,932
31.	**Total Depreciation**		$ 581,505
32.			
33.	**December 31, 2021**		
34.	Utility Plant In Service (UPIS)		$ 23,023,828
35.	Transportation		274,306
36.	Computers		796,766
37.	**Total Gross Plant In Service**		$ 24,094,900
38.			
39.	Accumulated Depreciation UPIS		$ (8,933,837)
40.	Accumulated Depreciation Transportation		(210,199)
41.	Accumulated Depreciation Computers		(516,295)
42.	**Total Accumulated Depreciation**		$ (9,660,331)
43.			
44.	**Future Period December 31, 2021**		$ 14,434,569
45.			
46.			
47.	**Additions**		
48.	Utility Plant In Service (UPIS)	[2]	$ 3,086,138
49.	Transportation	[3]	0
50.	Computers	[4]	28,847
51.	**Total Additions**		$ 3,114,985
52.			
53.	**Retirements**		
54.	Utility Plant In Service (UPIS)	[2]	$ (136,113)
55.	Transportation	[3]	0
56.	Computers	[4]	0
57.	**Total Retirements**		$ (136,113)
58.			
59.	**Depreciation**		
60.	Utility Plant In Service (UPIS)	[2]	$ 580,011
61.	Transportation	[3]	21,385
62.	Computers	[4]	63,659
63.	**Total Depreciation**		$ 665,056
64.			
65.	**December 31, 2022**		
66.	Utility Plant In Service (UPIS)		$ 25,973,854
67.	Transportation		274,306
68.	Computers		825,613
69.	**Total Gross Plant In Service**		$ 27,073,772
70.			
71.	Accumulated Depreciation UPIS		$ (9,377,736)
72.	Accumulated Depreciation Transportation		(231,584)
73.	Accumulated Depreciation Computers		(579,954)
74.	**Total Accumulated Depreciation**		$ (10,189,274)
75.			
76.	**FPFTY December 31, 2022**		$ 16,884,498
77.			
78.			
79.	Source:		
80.	[1] Trial Balance		
81.	[2] wp-p1		
82.	[3] wp-p2		
83.	[4] wp-p3		

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Utility Plant Additions and Retirements
Base Year (Per Books) Ended December 31, 2020
Future Test Year Ended December 31, 2022

Line No.	A		B
			Community Utilities of Pennsylvania Sewer
	December 31, 2020		
1.	**Utility Plant In Service**		
2.	Total Plant In Service Cost	$	21,800,964
3.	Total Accumulated Depreciation		(9,209,332)
4.	Net Book Value 12/31/2020	$	12,591,632
5.			
6.	**December 31, 2021**		
7.	**Utility Plant In Service**		
8.	Total Plant In Service Cost 12/31/2020	$	21,800,964
9.	Pro Forma Additions		2,424,442
10.	Pro Forma Retirements		(130,505)
11.	Total Plant In Service Cost 12/31/2021	$	24,094,900
12.			
13.	Total Accumulate Depreciation 12/31/2020	$	(9,209,332)
15.	Depreciation Expense		(581,505)
16.	Total Accumulated Depreciation 12/31/2021	$	(9,790,837)
17.			
18.	Net Book Value 12/31/2021	$	14,304,063
19.			
20.			
21.	Change in Gross Plant	$	2,293,936
22.	Change in Accumulated Depreciation		(581,505)
23.	Depreciation Expense	$	581,505
24.			
25.	**December 31, 2022**		
26.	**Utility Plant In Service**		
27.	Total Plant In Service Cost 12/31/2021	$	24,094,900
28.	Pro Forma Additions		4,485,944
29.	Pro Forma Retirements		(136,113)
30.	Total Plant In Service Cost 12/31/2022	$	28,444,731
31.			
32.	Total Accumulate Depreciation 12/31/2021	$	(9,790,837)
34.	Depreciation Expense		(665,056)
35.	Total Accumulated Depreciation 12/31/2022	$	(10,455,892)
36.			
37.	Net Book Value 12/31/2022	$	17,988,839
38.			
39.			
40.	Change in Gross Plant	$	4,349,831
41.	Change in Accumulated Depreciation	$	(665,056)
42.	Depreciation Expense	$	665,056

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Calculation of Working Capital
Future Test Year Ended December 31, 2022

Line No.	A	B	C
			Sewer
1	**12/31/20 Base Year**		
2	Maintenance Expenses		$ 1,223,151
3	General Expenses		713,367
4	Taxes Other Than Income		78,210
5	Reduction of Real Estates Taxes		(33,296)
6			
7	Total		$ 1,981,432
8			
9	Working Capital	45/360	$ 247,679
10			
11			
12	**12/31/21 Forecast**		
13	Maintenance Expenses		$ 1,001,879
14	General Expenses		756,697
15	Taxes Other Than Income		90,927
16	Reduction of Real Estates Taxes		(36,800)
17			
18	Total		$ 1,812,703
19			
20	Working Capital	45/360	$ 226,588
21			
22			
23	**12/31/22 Forecast**		
24	Maintenance Expenses		$ 1,016,598
25	General Expenses		789,116
26	Taxes Other Than Income		45,078
27	Reduction of Real Estates Taxes		(41,350)
28			
29	Total		$ 1,809,443
30			
31	Working Capital	45/360	$ 226,180

	A	B	C	D
Line No.	**Description**	**December 31, 2020**	**Annual Interest Expense**	**Capital Structure**
1.	COMMON SHAREHOLDERS' EQUITY:			
2.	Common shares, $.10 par value; authorized and			
3.	issued 1,000 shares	$ 110		
4.	Paid-in capital	223,265,034		
5.	Retained earnings	88,700,896		
6.				
7.	Total Common Shareholder's Equity	$ 311,966,040		47.68%
8.				
9.	LONG-TERM DEBT:			
10.	Collateral trust notes -			
11.	6.58%, $9,000,000 due in annual installments	$ 143,340,372	$ 9,517,639	
12.	beginning in 2017 through 2035			
14.	Collateral trust notes -			
16.	4.37%, beginning in 2018 through 2033	$ 99,556,146	$ 4,435,787	
17.				
14.	Collateral trust notes -			
16.	3.15%, beginning in 2020 through 2030	$ 49,781,241	$ 1,598,231	
17.				
14.	Collateral trust notes -			
16.	3.35%, beginning in 2020 through 2035	$ 49,776,724	$ 1,690,487	
17.				
18.	Toronto Dominion Bank Line of Credit			
19.	3.26% Libor Rate as of 12/31/2019			
20.	beginning in 10/2015 through 10/2020	$ (160,888)	$ 58,505	
21.				
22.	Total Debt	$ 342,293,595	$ 17,300,649	52.32%
23.				
24.	TOTAL CAPITALIZATION	$ 654,259,635		100.00%
25.				
26.	COST OF DEBT	5.05%		
27.				
28.				
29.		Ratio	Cost	Weighted Cost
30.	Debt	52.32%	5.05%	2.64%
31.	Common Equity	47.68%	10.35%	4.94%
32.		100.00%		7.58%
33.				

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Pro Forma Interest Expense
Future Test Year Ended December 31, 2022

Line No.	A	B
		Sewer
1	Pro Forma Present Rate Base	10,900,290
2		
3	Debt Ratio	52.32%
4		
5	Embedded Cost of Debt	5.05%
6		
7		
8	Pro Forma Interest Expense	288,237
9		
10	Pro Forma Present Rate Base	13,302,090
11		
12	Debt Ratio	52.32%
13		
14	Embedded Cost of Debt	5.05%
15		
16		
17	Pro Forma Interest Expense	351,748

CUPA WW Exhibit DMC-2

ERC Allocation Weights

WP-DC-01 (ERC Allocations)

Co	Territory	Water	Sewer	Total ERC Count	Water - Co	Sewer - Co	State	Mid-Atlantic	Leadership	WSC
315	Westgate	995	-	995			13.84%	5.23%	1.92%	0.33%
316	UIP	-	1,601	1,601			22.27%	8.41%	3.10%	0.54%
317	Penn Estates	1,740	1,739	3,479			48.40%	18.28%	6.73%	1.17%
319	Tamiment	556	557	1,113			15.49%	5.85%	2.15%	0.37%
CUPA	**State**	**3,291**	**3,897**	**7,188**	**45.79%**	**54.21%**	**100.00%**	**37.78%**	**13.90%**	**2.41%**
	MD			4,627				24.32%	8.95%	1.55%
	NJ			1,079				5.67%	2.09%	0.36%
	VA			6,133				32.23%	11.86%	2.06%
	Mid-Atlantic			**19,027**				**100.00%**	**36.81%**	**6.39%**
	IL			16,394					31.71%	5.50%
	IN			8,450					16.35%	2.84%
	KY			7,824					15.14%	2.63%
	Leadership			**51,694**					**100.00%**	**17.35%**
	SC			31,268						10.50%
	NV			24,704						8.29%
	AZ			10,094						3.39%
	FL			64,743						21.73%
	LA			31,879						10.70%
	GA			16,971						5.70%
	TN			312						0.10%
	NC			57,023						19.14%
	al			2,264						0.76%
	TX			6,966						2.34%
	WSC			**297,918**						**100.00%**

	(A) Source Tab - Electric Forecast	(A) Source Tab - Electric Forecast
	2021 Forecast	**2022 Forecast**
Purchased Power - Water	**103,864**	**106,110**
Purchased Power - Wastewater	**122,976**	**125,635**
CUPA Forecast	**$ 226,840**	**$ 231,745**

Description of calculations:
Purchased power forecast calculations for each service territory can be found on the tab labeled, "Electric Forecast"
Forecasted period is found in columns Z through AW. Purchased power costs are calculated using the
average year-over-year growth rate % calculated in column M of the "Electric Forecast" tab using historical purchased
power costs from September 2012 to May 2020 for each service territory. Historical costs are found in columns E through K of
"Electric Forecast" tab. Historical invoicing is shown on tab, "Electric PV" and allocated to the appropriate service period on tab, "Electric Service Period"
The seasonality weights are shown in Rows 4-7 on tab, "Summarized Service Period"

Notes/Source:
(A) Electric Forecast Tab

	A	B	C	D	E	F
	December 31, 2021					
Line No.	**Account Description**	**Historical 3-Year Average**	**Expense Adjustment**	**Allocation**	**Water**	**Wastewater**
1	62290 - Deferred Maintenance Expense	64,908		Combined	24,683	40,224
2	62206 - Water Main Supplies	11,105		Water	11,105	-
3	62207 - Water Main Repairs	14,935		Water	14,935	-
4	62208 - Water Main Main Breaks	13,229		Water	13,229	-
5	62209 - Water Main Electric Equip Repair	7,503		Water	7,503	-
6	62210 - Water Main Permits	10,358		Water	10,358	-
7	62211 - Water Main Other Maint Exp	33,425		Water	33,425	-
8	62216 - Sewer Main Supplies	4,982		Wastewater	-	4,982
9	62217 - Sewer Main Repairs	13,317		Wastewater	-	13,317
10	62218 - Sewer Main Main Breaks	4,035		Wastewater	-	4,035
11	62219 - Sewer Main Electric Equip Repair	784		Wastewater	-	784
12	62220 - Sewer Main Permits	6,225		Wastewater	-	6,225
13	62221 - Sewer Main Other Maint Exp	32,300		Wastewater	-	32,300
14	62225 - Other Plant Maintenance	1,647		Combined	754	893
15	62226 - Communication Expense	3,428		Combined	1,570	1,859
16	62227 - Equipment Rental	-		Combined	-	-
17	62228 - Oper Contracted Workers	12,700	10,160	Combined	1,163	1,377
18	62229 - Outside Lab Fees	-		Combined	-	-
19	62230 - Uniforms	5,990		Combined	2,743	3,247
20	62231 - Weather/Hurricane/Fuel	4,296		Combined	1,967	2,329
21	62325 - Sludge Hauling Adjustment (Historical Avg vs Forecasted)			Sewer		32,445
22						
23	Total December 31, 2021 Maintenance Expense				123,435	144,017
24					.	
25	**December 31, 2022**					
	Account Description	**Historical 3-Year Average**	**Expense Adjustment**	**Allocation**	**Water**	**Wastewater**
26	62290 - Deferred Maintenance Expense	64,908	13,695	Actuals	18,192	32,800
27	62206 - Water Main Supplies	11,105	-	Water	11,105	-
28	62207 - Water Main Repairs	14,935	-	Water	14,935	-
29	62208 - Water Main Main Breaks	13,229	-	Water	13,229	-
30	62209 - Water Main Electric Equip Repair	7,503	-	Water	7,503	-
31	62210 - Water Main Permits	10,358	-	Water	10,358	-
32	62211 - Water Main Other Maint Exp	33,425	-	Water	33,425	-
33	62216 - Sewer Main Supplies	4,982	-	Wastewater	-	4,982
34	62217 - Sewer Main Repairs	13,317	-	Wastewater	-	13,317
35	62218 - Sewer Main Main Breaks	4,035	-	Wastewater	-	4,035
36	62219 - Sewer Main Electric Equip Repair	784	-	Wastewater	-	784
37	62220 - Sewer Main Permits	6,225	-	Wastewater	-	6,225
38	62221 - Sewer Main Other Maint Exp	32,300	-	Wastewater	-	32,300
39	62225 - Other Plant Maintenance	1,647	-	Combined	754	893
40	62226 - Communication Expense	3,428	-	Combined	1,570	1,859
41	62227 - Equipment Rental	-	-	Combined	-	-
42	62228 - Oper Contracted Workers	12,700	10,160	Combined	1,163	1,377
43	62229 - Outside Lab Fees	-	-	Combined	-	-
44	62230 - Uniforms	5,990	-	Combined	2,743	3,247
45	62231 - Weather/Hurricane/Fuel	4,296	-	Combined	1,967	2,329
46	62325 - Sludge Hauling Adjustment (Historical Avg vs Forecasted)			Sewer		30,409
47						
48	Total December 31, 2022 Maintenance Expense				116,943	134,556

Community Utilities of Pennsylvania

WP-DC-05 (Sludge Hauling and Sewer Rodding Expense)

Sewer Rodding & Sludge Hauling			A	B	C	D Forecast	E Forecast
Obj	**NARUC Acct. No.**	**Account Description**	**2018**	**2019**	**2020**	**2021**	**2022**
6400	711	Sewer Rodding	28,825	1,875	4,079	-	-
6410	711	Sludge Hauling	189,460	222,255	349,262	224,752	226,788
Total			**218,285**	**224,130**	**353,341**	**224,752**	**226,788**

Note/Source:

A = Actual Expense from Source Tab 2018-2020 GL

B = Actual Expense from Source Tab 2018-2020 GL

C = Actual Expense from Source Tab 2018-2020 GL

D= Forecasted expense from Source Tabs "UIP Forecast, Penn Estates Forecast, and Tamiment Forecast"

E= Forecasted expense from Source Tabs "UIP Forecast, Penn Estates Forecast, and Tamiment Forecast"

	Source Tab - PA Chemical Load	Water ERC Allocation Weight	Total Water	Wastewater ERC Allocation Weight	Total Wastewater
CUPA 2021 Forecast - Chlorine	**$ 16,448**	**100.00%**	**16,448**	**0.00%**	**-**
CUPA 2021 Forecast - Odor Control	**$ 13,820**	**0.00%**	**-**	**100.00%**	**13,820**
CUPA 2021 Forecast - Other	**$ 192,316**	**45.79%**	**88,056**	**54.21%**	**104,260**
TOTAL 2021 Forecast			**$ 104,504**		**$ 118,080**
CUPA 2022 Forecast - Chlorine	**$ 16,448**	**100.00%**	**16,448**	**0.00%**	**-**
CUPA 2022 Forecast - Odor Control	**$ 13,820**	**0.00%**	**-**	**100.00%**	**13,820**
CUPA 2022 Forecast - Other	**$ 212,839**	**45.79%**	**97,453**	**54.21%**	**115,386**
TOTAL 2022 Forecast		**45.79%**	**113,902**	**54.21%**	**129,206**

Description of calculations:

Chemical expense forecast calculations for each service territory can be found on individual service territory tabs labeled "317100", "317101", "316100","319100", "319101" in columns CE through DB. Transportation costs and chemical costs by type are listed in columns G & H in the individual service territory tabs Chemical forecast amounts are calculated using the actual number of chemical units expected to be purchased (which are found in columns P through AM on the service territory tabs) multiplied by the effective cost per unit (column G plus column H) for each chemical type used by each service territory.

	Fuel	Auto Repairs	Other Transportation	Rounding	Annual Total	Water Allocated	Wastewater Allocated
CUPA Forecast 2021	**$ 22,903**	**$ 21,679**	**$ 4,961**	**$ 3**	**$ 49,546**	**$ 22,686**	**$ 26,860**
CUPA Forecast 2022	**$ 24,273**	**$ 22,066**	**$ 2,975**	**$ 2**	**$ 49,316**	**$ 22,580**	**$ 26,736**

Notes
Fuel is forecasted at the forecasted cost per gallon multiplied by forecasted usage
Auto repairs are forecasted based on historical averages
Other transportation expenses include license renewals and miscellaneous transportation costs.

	(A) Source Tab - 315, 316, 317 & 319	(B) Total	(C) Water ERC Allocation Weight	(D) Total Water	(E) Wastewater ERC Allocation Weight	(F) Total Wastewater
CUPA Forecast 2021	**$ 21,221**	**$ 21,221**	**45.79%**	**9,716**	**54.21%**	**11,504**
CUPA Forecast 2022	**$ 21,738**	**$ 21,738**	**45.79%**	**9,953**	**54.21%**	**11,785**

Notes/Source:
(A) 315, 316, 317, 319 & 858 Tabs
(B) Total Expense
(C) = WP-DC-01 (ERC Allocations) - Water Co.
(D) = (C) * (B)
(E) = WP-DC-01 (ERC Allocations) - Wastewater Co.
(F) = (B) * (K)

	(A) Source Tab - 858 & 317	(B) Source Tab - 700	(C) Rounding	(D) Total	(E) Water ERC Allocation Weight	(F) Total Water	(G) Wastewater ERC Allocation Weight	(H) Total Wastewater
CUPA Forecast 2021	$ 6,539	$ 1,668		8,207	45.79%	3,758	54.21%	4,449
CUPA Forecast 2022	$ 6,670	$ 1,668	$ (6)	$ 8,332	45.79%	3,815	54.21%	4,517

Notes/Source:
(A) 858 & 317 Tab
(B) 700 Tab
(C) Rounding
(D) (A) + (B) + (C)
(E) = WP-DC-01 (ERC Allocations) - Water Co.
(F) = (D) * (E)
(G) = WP-DC-01 (ERC Allocations) - Wastewater Co.
(H) = (D) * (G)

Community Utilities of Pennsylvania, Inc.
Office Supplies, Utilities, and Other Office Expense Forecast Summary

WP-DC-09 (Office Supplies, Utilities, and Other Office Expense)
Office Supplies, Utilities, and Other Office Expense Forecast Summary

	(A) Source Tab - Office Expense	(B) Source Tab - Office Utility	(C) Source Tab - Billing & Customer Service	(D) Source Tab - Information Technology	(E) Water Total	(F) Wastewater Total
CUPA Forecast 2021	**17,759**	**56,740**	**21,405**	**6,283**	**46,789**	**55,399**
CUPA Forecast 2022	**$ 17,721**	**$ 52,848**	**$ 21,856**	**$ 6,283**	**$ 45,196**	**$ 53,513**

Notes/Source:
(A) Office Expense Tab
(B) Office Utility Tab
(C) Billing and Customer Service Tab
(D) Information Technology Tab
(E) Total Water Expense
(F) Total Wastewater Expense

	(A) State Cost Center Tab	(B) 315,316,317,319 Tab	(C) Regional - 700- President Tab	(D) Regional - 803- VP Tab	(E) Total	(F) Water ERC Allocation Weight	(G) Total Water	(H) Wastewater ERC Allocation Weight	(I) Total Wastewater
CUPA Forecast 2021	87,700	6,366	1,548	3,069	98,682	45.79%	45,184	54.21%	53,498
CUPA Forecast 2022	99,407	6,614	1,608	3,176	110,804	45.79%	50,734	54.21%	60,070

Description of calculations:
Insurance costs are forecasted at CRU-US and are based on review and analysis of current and projected insurance policies.
Additional detail of insurance policy information can be found on the "Insurance Policies" tab.

Community Utilities of Pennsylvania, Inc.
Miscellaneous Expense Forecast

WP-DC-11 (Testing, Meter Reading, and Miscellaneous Expense
Miscellaneous Expense Forecast

NARUC	Account Description	Total Forecast 2021 Combined Operatior	Total Forecast 2022 Combined Operations	2021 Forecast Water	2021 Forecast Wastewater	2022 Forecast Water	2022 Forecast Wastewater
636	METER READING	7,104	12,104	7,104	-	12,104	-
675	LICENSE FEES	977	1,176	447	530	538	638
675	MEMBERSHIPS	3,055	3,146	1,399	1,656	1,440	1,706
604	TRAINING EXPENSE	14,409	11,035	6,598	7,812	5,052	5,982
675	OTHER MISC EXPENSE	127	2,111	58	69	966	1,144
660	TRAVEL LODGING	1,150	5,018	526	623	2,298	2,720
675	TRAVEL AIRFARE	1,668	1,668	764	904	764	904
675	TRAVEL TRANSPORTATION	1,687	1,251	773	915	573	678
660	TRAVEL MEALS	368	383	168	199	175	208
675	TRAVEL ENTERTAINMENT	(2,122)	-	(972)	(1,151)	-	-
675	TRAVEL OTHER	1,503	1,551	688	815	710	841
635	TEST-WATER	11,218	9,685	11,218	-	9,685	
635	TEST-EQUIP/CHEMICAL	12,558	12,847	5,750	6,808	5,882	6,965
635	TEST-SAFE WATER DRINKIN	6,300	3,150	6,300	-	3,150	-
635	TEST-SEWER	40,138	43,519	-	40,138	-	43,519
	ROUNDING	13	3	6	7	4	(2)
	TOTAL	**100,152**	**108,646**	**40,827**	**59,325**	**43,343**	**65,303**

Notes/Source:
"315" Tab - Westgate Operations
"316" Tab - UIP Operations
"317" Tab - Penn Estates Operations
"319" Tab - Tamiment Operations
"858" Tab - State of PA Cost Center
"700" Tab - President/Regional Cost Center - Allocated at 13.90% to CUPA

Community Utilities of Pennsylvania, Inc.
Utility Commission Tax Expense Forecast

WP-DC-12 (Utility Commission Tax Expense)
Utility Commission Tax Expense Forecast

Territory	(A) Water Revenue Source Tab - CUPA	(B) Wastewater Revenue Source Tab - CUPA	(C) Source Tab - Utility Rate Forecast	(D) Total Water	(E) Total Wastewater
CUPA Forecast 2021	**2,073,818**	**2,664,330**	**0.64%**	**13,324**	**17,118**
CUPA Forecast 2022	**$ 2,813,087**	**$ 3,663,034**	**0.66%**	**$ 18,624**	**$ 24,251**

Description of calculations:
Forecasted revenue is multiplied by Utility Commission tax rate of .64% for 2021 and 0.66% for 2022

Notes/Source:
(A) CUPA Tab
(B) CUPA Tab
(C) Utility Rate Forecast Tab
(D) = (A)*(C)
(E) = (B)*(C)

Community Utilities of Pennsylvania, Inc.
Property Tax Expense Forecast

WP-DC-13 (Property Tax Expense)
Property Tax Expense Forecast

	A) Water Plant in Service	B) Wastewater Plant in Service	C) Water Property Tax Rate	D) Wastewater Property Tax Rate	(E) Total Water	(F) Total Wastewater
CUPA Forecast 2021	**14,865,865**	**24,094,967**	**0.14%**	**0.15%**	**21,312**	**36,800**
CUPA Forecast 2022	**16,159,623**	**27,073,908**	**0.14%**	**0.15%**	**23,167**	**41,350**

Description of calculations:
Forecasted property taxes for PA are based on historical averages of property tax to net plant in service.

Notes/Source:
(A) Plant in Service Tab
(B) Plant in Service Tab
(C) Property Tax Tab
(D) Property Tax Tab
(E) = (A) * (C)
(F) = (B) * (D)

Community Utilities of Pennsylvania, Inc.
Net Capital Investment Forecast

WP-DC-14 (Net Capital Investments)
Net Capital Investment Forecast

Spend Category	*Water - 2021-2022*	*Wastewater - 2021-2022*
Capital Projects	1,757,030.55	4,042,135.42
Plant (Captime and GL spend)	750,915.12	1,233,200.93
Vehicles	16,025.52	18,974.48
Computers	207,020.82	245,116.17
Total	**$ 2,730,992.00**	**$ 5,539,427.00**

CUPAWW STATEMENT NO. 4
June 11, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

DIRECT TESTIMONY

OF

ANDREW DICKSON

WASTEWATER RATE DESIGN

SPONSORING CUPAWW EXHIBIT NOS. AWD-1 AND AWD-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025207

Direct Testimony of Andrew Dickson

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME OCCUPATION AND BUSINESS ADDRESS.

A: My name is Andrew Dickson. I am a Senior Financial Analyst for Corix Regulated Utilities (US) Inc. ("CRUI"), formerly known as Utilities, Inc. [1] and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of CRUI. My business address is 500 W Monroe Street, Suite 3600, Chicago, IL 60661.

Q: PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

A: As Senior Financial Analyst, I am responsible for financial analysis of individual subsidiaries of CRUI, preparation of annual budgets and forecasts, and the preparation and submission of regulatory filings.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A: I am a Certified Business Economist, as designated by the National Association for Business Economics (NABE). I hold a Master of Science in Applied Economics (2017), in addition to a Bachelor of Arts in Economics (2016) and a Bachelor of Science in Biological Sciences (2016) from the University of Cincinnati. After my graduation, I joined Raftelis Financial Consultants as a cost of service and rate design

[1] Utilities, Inc changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

consultant for water, wastewater, and electric utilities. I served as a consultant with Raftelis for approximately two years, until July of 2019, when I began my current role as a Senior Financial Analyst with CRUI.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION OR ANY OTHER PUBLIC UTILITY COMMISSIONS?

A: I have not testified before the Pennsylvania Public Utility Commission. I have provided testimony before commissions in Virginia, Kentucky, and Illinois. Topics covered in that testimony range from elements of the revenue requirement, to cost allocations, to rate design such as low-income rates.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: My testimony explains and supports the rate design that CUPA has proposed. I am sponsoring two exhibits:

- CUPAWW Exhibit No. AWD-1 – CUPA's wastewater rate design
- CUPAWW Exhibit No. AWD-2 – CUPA's proposed wastewater rates

Q: PLEASE DESCRIBE THE CONTENTS OF CUPAWW EXHIBIT NO. AWD-1.

A: CUPAWW Exhibit No. AWD-1 contains the foundational design for CUPA's wastewater rates. It walks step-by-step from the cost-of-service results and rate revenue requirement to rates. AWD-1 starts with the results of CUPA's cost-of-service study, identifies the

denominators for charge development (equivalent meters and bills), and then produces charges that mirror CUPA's existing wastewater rate structure.

Q: PLEASE DESCRIBE THE COST-OF-SERVICE ADJUSTMENT.

A: The cost-of-service adjustment functions as a bridge between our rate revenue requirement and our cost-of-service study. It calculates the proportions identified for each functional cost component (treatment/disposal, collection system, and billing) and maintains them in CUPA's rate revenue requirement of $3,663,034. The proportional amounts of the rate revenue requirement allocated to each functional cost component provides the foundation on which our rate design begins.

Q: PLEASE DESCRIBE THE CALCULATION OF EQUIVALENTS.

A: CUPA's cost-of-service study uses equivalency factors that are mirrored in our rate design. These equivalencies are: 0.25 for each availability bill, 1.00 per residential and commercial bill, and 12.50 per school bill.

Q: HOW ARE THESE COSTS RECOVERED IN RATES?

A: Treatment/Disposal and Collection System costs are to be recovered based on equivalents – our Treatment/Disposal costs come to $42.18 per equivalent, and our Collection System costs come to $31.57 per equivalent. Billing and Collecting costs are to be recovered based on bills, rather than equivalents, as these costs do not vary significantly based on which customer we are sending a given bill to. These costs are $4.47 per bill.

Q: WHAT IS THE SCHOOL RATE?

A: We have historically charged the two schools that we serve based on number of pupils. We currently understand there to be 1,152 students between the two schools. Our rate design estimates that we should recover $926.31 per school bill ($22,232 is thus the class revenue requirement over the test year). This calculates to a charge of $1.61 per pupil per bill. This charge by pupil provides an additional layer to delineate the appropriate share of this class revenue requirement to recover from each school.

Q: PLEASE DESCRIBE THE CONTENTS OF CUPAWW EXHIBIT NO. AWD-2.

A: CUPAWW Exhibit No. AWD-2 summarizes our proposed wastewater rates and provides a comparison to existing rates.

Q: DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

CUPA WW Exhibit AWD-1

Community Utilities of Pennsylvania Inc.
Sewer
Rate Design
Future Test Year Ended December 31, 2022

Cost-of-Service Functionalization (page 9)

Functional Cost Component	COS	Proportions	Adjusted COS (to match rate revenue requirement)
Treatment/Disposal	$ 1,968,187	54%	$ 1,967,626
Collection System	$ 1,473,278	40%	$ 1,472,858
Billing and Collecting	$ 222,614	6%	$ 222,551
	$ 3,664,079		$ 3,663,034

Equivalent Meters

Description	Annual Bill Count (1 bill per month)	Equivalency Factor (Pa. Code §73.17)	Equivalent Meters
Availability (Tamiment, converted to monthly)	3,936	0.25	984
Availability (All Other, converted to monthly)	588	0.25	147
Residential	45,107	1.00	45,107
School	24	12.50	300
Commercial	114	1.00	114
	49,769		46,652

Treatment/Disposal Recovery Development		
Revenue to be Recovered	$	1,967,626
Equivalent Meters		46,652
Charge per Equivalent Meter	**$**	**42.18**
Collection System Recovery Development		
Revenue Required for Billing Costs	$	1,472,858
Bill Count (annual, 1 per month)		46,652
Charge per Equivalent Meter	**$**	**31.57**
Billing and Collecting Recovery Development		
Revenue Required for Billing Costs	$	222,551
Bill Count (annual, 1 per month)		49,769
Billing Component per Bill	**$**	**4.47**

Development of Flat Charges

Schedule of Fixed Charges	Treatment/Disposal	Collection System	Billing/Collecting	Total Monthly Charge	Per Pupil
Availability	$ 10.54	$ 7.89	$ 4.47	$ 22.91	
Residential	$ 42.18	$ 31.57	$ 4.47	$ 78.22	
School	$ 527.20	$ 394.64	$ 4.47	$ 926.31	$ 1.61
Commercial	$ 42.18	$ 31.57	$ 4.47	$ 78.22	

CUPA WW Exhibit AWD-2

Community Utilities of Pennsylvania Inc.
Sewer
Rate Design
Future Test Year Ended December 31, 2022

Fixed Charges

Meter Size	CUPA Existing Charge (Monthly)	*% Change CUPA, Proposed*	Tamiment Existing Charge (Monthly)	*% Change Tamiment, Proposed*	Proposed Charge (per Month)	
Availability	$ 13.12	*74.6%*	$ 7.63	*200.1%*	$ 22.91	
Residential	$ 55.39	*41.2%*	$ 24.48	*219.5%*	$ 78.22	
School	$ 1.19	*35.1%*			$ 1.61	**Per Pupil*
Commercial	$ 55.39	*41.2%*	$ 163.24	*-52.1%*	$ 78.22	
Volumetric Charges						
Regular Residential Rate*			$ 13.73	*-100.0%*	$ -	
Low-Income Residential Rate*			$ 13.73	*-100.0%*	$ -	
Commercial Rate			$ 13.73	*-100.0%*	$ -	

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3025206 & R-2021-3025207

CUPA Statement No. 5

Direct Testimony of

Dylan W. D'Ascendis, CRRA, CVA

on behalf of

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

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I. INTRODUCTION

A. WITNESS IDENTIFICATION

Q. Please state your name and business address.

A. My name is Dylan W. D'Ascendis. My business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

Q. By whom are you employed and in what capacity?

A. I am a Director at ScottMadden, Inc.

B. BACKGROUND AND QUALIFICATIONS

Q. Please summarize your professional experience and educational background.

A. I have offered expert testimony on behalf of investor-owned utilities in over 25 state regulatory commissions in the United States, the Federal Energy Regulatory Commission, the Alberta Utility Commission, and one American Arbitration Association panel on issues including, but not limited to, common equity cost rate, rate of return, valuation, capital structure, class cost of service, and rate design.

On behalf of the American Gas Association ("AGA"), I calculate the AGA Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured on a monthly basis. The AGA Gas Index and AGIF are a market capitalization weighted index and mutual fund, respectively, comprised of the common stocks of the publicly traded corporate members of the AGA.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In 2011, I was awarded the professional designation "Certified Rate

of Return Analyst" by SURFA, which is based on education, experience, and the successful completion of a comprehensive written examination.

I am also a member of the National Association of Certified Valuation Analysts ("NACVA") and was awarded the professional designation "Certified Valuation Analyst" by the NACVA in 2015.

I am a graduate of the University of Pennsylvania, where I received a Bachelor of Arts degree in Economic History. I have also received a Master of Business Administration with high honors and concentrations in Finance and International Business from Rutgers University.

The details of my educational background and expert witness appearances are included in Appendix A.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present evidence on behalf of Community Utilities of Pennsylvania, Inc. ("CUPA" or the "Company") about the appropriate capital structure and corresponding cost rates the Company should be given the opportunity to earn on its jurisdictional rate base.

Q. Have you prepared an Exhibit in support of your recommendation?

A. Yes. I have prepared Exhibit No. CUPA-DWD which contains Schedules DWD-1 through DWD-8. Exhibit No. CUPA-DWD has been prepared by me or under my direct supervision.

Q. What is your recommended cost of capital for CUPA?

A. I recommend the Pennsylvania Public Utility Commission (the "Commission") authorize the Company the opportunity to earn an overall rate of return of 7.58%

based on the actual capital structure of CUPA's parent, CORIX Regulated Utilities, Inc. ("CRU") at December 31, 2020. The ratemaking capital structure consists of 52.32% long-term debt at an embedded cost rate of 5.05% and 47.68% common equity at my recommended common equity cost rate of 10.35%. The overall rate of return is summarized on page 1 of Schedule DWD-1 and in Table 1 below:

Table 1: Summary of Overall Rate of Return

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.94%
Total	100.00%		7.58%

III. SUMMARY

Q. Please summarize your recommended common equity cost rate.

A. My recommended common equity cost rate of 10.35% is summarized on page 2 of Schedule DWD-1. I have assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical, risk to CUPA. Using companies of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the *Hope*[1] and *Bluefield*[2] cases. No proxy group can be identical in risk to any single company, so there must be an evaluation of relative risk between the company and the proxy group to see if it is appropriate to make adjustments to the proxy group's indicated rate of return.

My recommendation results from the application of several cost of common equity models, specifically the Discounted Cash Flow ("DCF") model, the Risk Premium Model ("RPM"), and the Capital Asset Pricing Model ("CAPM"), to the

[1] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944). *("Hope")*
[2] *Bluefield Water Works Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679 (1922). ("*Bluefield*")

market data of a proxy group of seven water companies ("Utility Proxy Group") whose selection criteria will be discussed below. In addition, I also applied the DCF, RPM, and CAPM to a proxy group of domestic, non-price regulated companies comparable in total risk to the Utility Proxy Group ("Non-Price Regulated Proxy Group").

The results derived from each are as follows:

Table 2: Summary of Common Equity Cost Rate

Discounted Cash Flow Model	8.88%
Risk Premium Model	10.90%
Capital Asset Pricing Model	11.04%
Market Models Applied to Comparable Risk, Non-Price Regulated Companies	11.08%
Indicated Range of Common Equity Cost Rates Before Adjustments for Company-Specific Risk	8.88% - 11.08%
Size Risk Adjustment	1.00%
Indicated Range of Common Equity Cost Rates after Adjustment	9.88% - 12.08%
Recommended Cost of Common Equity	10.35%

After analyzing the indicated common equity cost rates derived through these models, the indicated range of common equity cost rates produced by the models are between 8.88% and 11.08%, which are applicable to the Utility Proxy Group. In view of these model results, it is clear that the DCF model is a low side outlier when compared to the results of the other models.

The indicated range of common equity cost rates was then adjusted upward by 1.00% to reflect CUPA's smaller size relative to the Utility Proxy Group. These adjustments result in a Company-specific range of common equity cost rates

between 9.88% and 12.08%. From this range of results, I recommend the Commission consider a common equity cost rate of 10.35% for use in setting rates for the Company.

IV. GENERAL PRINCIPLES

Q. What general principles have you considered in arriving at your recommended common equity cost rate of 10.35%?

A. In unregulated industries, the competition of the marketplace is the principal determinant of the price of products or services. For regulated public utilities, regulation must act as a substitute for marketplace competition. Assuring that the utility can fulfill its obligations to the public, while providing safe and reliable service at all times, requires a level of earnings sufficient to maintain the integrity of presently invested capital. Sufficient earnings also permit the attraction of needed new capital at a reasonable cost, for which the utility must compete with other firms of comparable risk, consistent with the fair rate of return standards established by the U.S. Supreme Court in the previously cited *Hope* and *Bluefield* decisions. Consequently, marketplace data must be relied on in assessing a common equity cost rate appropriate for ratemaking purposes. Just as the use of the market data for the proxy group adds reliability to the informed expert's judgment used in arriving at a recommended common equity cost rate, the use of multiple generally accepted common equity cost rate models also adds reliability and accuracy when arriving at a recommended common equity cost rate.

A. BUSINESS RISK

Q. Please define business risk and explain why it is important to the determination of a fair rate of return.

A. Business risk is the riskiness of a company's common stock without the use of debt and/or preferred capital. Examples of such general business risks faced by all utilities (*i.e.*, electric, natural gas distribution, and water) include size, the quality of management, the regulatory environment in which utilities operate, customer mix and concentration of customers, service territory growth, and capital intensity. All of these have a direct bearing on earnings.

Consistent with the basic financial principle of risk and return, business risk is important to the determination of a fair rate of return, because the higher the level of risk, the higher the rate of return investors demand.

Q. What business risks do the water and wastewater industries face in general?

A. Water and wastewater utilities have an ever-increasing responsibility to be stewards of the environment from which water supplies are drawn in order to preserve and protect essential natural resources of the United States. This increased environmental stewardship is a direct result of compliance with the Safe Water Drinking Act, as well as a response to continuous monitoring by the Environmental Protection Agency ("EPA") and state and local governments, of the water supply for potential contaminants and their resultant regulations. This, plus aging infrastructure, necessitate additional capital investment in the distribution and treatment of water, exacerbating the pressure on free cash flows arising from increased capital expenditures for infrastructure repair and replacement. The

significant amount of capital investment and, hence, high capital intensity, is a major risk factor for the water and wastewater utility industry.

Value Line Investment Survey ("*Value Line*") observes the following about the water utility industry:

> As we mentioned, the average age of water pipelines in the United States is estimated to be more than 50 years old, with it not being unusual for some pipes to having been laid 75 to 100 years ago. Thus, capital budgets are usually burdensome, as miles and miles of new pipe are installed annually. Also, because of the size of the outlays, not all of the expenditures can be financed with internally generated funds. Many in the industry have to rely upon debt.
>
> * * *
>
> Another of the industry's attractive attributes is its regulatory climate, or basically the relationship between the water companies and authorities. Regulated businesses and utilities are often involved in disagreements and lawsuits. An example of this would be electric and gas companies and the states they operate in. Since authorities establish the rate of return that utilities can earn, a constructive relationship between the parties cannot be underestimated.[3]

The water and wastewater industry also experiences low depreciation rates. Depreciation rates are one of the principal sources of internal cash flows for all utilities (through a utility's depreciation expense) and are vital for a company to fund ongoing replacements and repairs of water and wastewater systems. Water / wastewater utility assets have long lives, and therefore have long capital recovery periods. As such, they face greater risk due to inflation, which results in a higher replacement cost per dollar of net plant.

Substantial capital expenditures, as noted by *Value Line,* will require significant financing. The three sources of financing typically used are debt, equity

[3] *Value Line Investment Survey*, January 8, 2021.

(common and preferred), and cash flow. All three are intricately linked to the opportunity to earn a sufficient rate of return as well as the ability to achieve that return. Consistent with *Hope* and *Bluefield*, the return must be sufficient to maintain credit quality as well as enable the attraction of necessary new capital, be it debt or equity capital. If unable to raise debt or equity capital, the utility must turn to either retained earnings or free cash flow,[4] both of which are directly linked to earning a sufficient rate of return. The level of free cash flow represents a utility's ability to meet the needs of its debt and equity holders. If either retained earnings or free cash flow is inadequate, it will be nearly impossible for the utility to attract the needed capital for new infrastructure investment necessary to ensure quality service to its customers. An insufficient rate of return can be financially devastating for utilities as well as a public safety issue for their customers.

The water and wastewater utility industry's high degree of capital intensity and low depreciation rates, coupled with the need for substantial infrastructure capital spending, require regulatory support in the form of adequate and timely rate relief, and in particular, a sufficient authorized return on common equity, so that the industry can successfully meet the challenges it faces.

B. <u>FINANCIAL RISK</u>

Q. Please define financial risk and explain why it is important to the determination of a fair rate of return.

A. Financial risk is the additional risk created by the introduction of debt and preferred stock into the capital structure. The higher the proportion of debt and preferred stock in the capital structure, the higher the financial risk (*i.e.* likelihood of default).

[4] Free Cash Flow = Operating Cash Flow (Funds From Operations) minus Capital Expenditures.

Therefore, consistent with the basic financial principle of risk and return, investors demand a higher common equity return as compensation for bearing higher default risk.

Q. Can bond and credit ratings be a proxy for the combined business and financial risk (*i.e.*, investment risk of an enterprise)?

A. Yes, similar bond ratings/issuer credit ratings reflect, and are representative of, similar combined business and financial risks (*i.e.*, total risk) faced by bond investors.[5] Although specific business or financial risks may differ between companies, the same bond/credit rating indicates that the combined risks are roughly similar, albeit not necessarily equal, as the purpose of the bond/credit rating process is to assess credit quality or credit risk, and not common equity risk.

Q. That being said, do rating agencies reflect company size in their bond ratings?

A. No. Neither S&P nor Moody's have minimum company size requirements for any given rating level. This means, all else equal, a relative size analysis needs to be conducted for companies with similar bond ratings.

V. COMMUNITY UTILITIES OF PENNSYLVANIA AND THE UTILITY PROXY GROUP

Q. Are you familiar with the operations of CUPA?

A. Yes. CUPA provides water service to approximately 3,300 customers and wastewater service to approximately 3,900 customers throughout Pennsylvania. As a wholly-owned subsidiary of CRU, CUPA is not publicly-traded.

[5] Risk distinctions within S&P's bond rating categories are recognized by a plus or minus, i.e., within the A category, an S&P rating can be at A+, A, or A-. Similarly, risk distinctions for Moody's ratings are distinguished by numerical rating gradations, i.e., within the A category, a Moody's rating can be A1, A2 and A3.

Q. Please explain how you chose your Utility Proxy Group.

A. The basis of selection for the Utility Proxy Group was to select those companies which meet the following criteria:

(i) They are included in the Water Utility Group of *Value Line's Standard Edition* (January 8, 2021);

(ii) They have 70% or greater of 2019 total operating income and 70% or greater of 2019 total assets attributable to regulated water operations;

(iii) At the time of preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (*i.e.*, one publicly-traded utility merging with or acquiring another);

(iv) They have not cut or omitted their common dividends during the five years ending 2019 or through the time of the preparation of this testimony;

(v) They have *Value Line* and Bloomberg Professional Services ("Bloomberg") adjusted betas;

(vi) They have a positive *Value Line* five-year dividends per share ("DPS") growth rate projection; and

(vii) They have *Value Line*, Zacks, Yahoo! Finance, or Bloomberg consensus five-year earnings per share ("EPS") growth rate projections.

The following seven companies met these criteria: American States Water Co., American Water Works Co., Inc., California Water Service Group, Essential Utilities, Inc., Middlesex Water Co., SJW Corp., and York Water Co.

Q. Please describe Schedule DWD-2, page 1.

A. Page 1 of Schedule DWD-2 contains comparative capitalization and financial statistics for the Utility Proxy Group identified above for the years 2015 to 2019.

During the five-year period ending 2019, the historically achieved average earnings rate on book common equity for the group averaged 10.45%. The average common equity ratio based on total permanent capital (excluding short-term debt) was 53.80%, and the average dividend payout ratio was 60.34%.

Total debt to earnings before interest, taxes, depreciation, and amortization for the years 2015 to 2019 ranges between 3.41x and 5.54x, with an average of 4.00x. Funds from operations to total debt range from 14.49% to 25.81%, with an average of 21.64%.

VI. CAPITAL STRUCTURE

Q. What capital structure ratios do you recommend be employed in developing an overall fair rate of return appropriate for the Company?

A. I recommend the use of the actual capital structure of CRU at December 31, 2020 as CUPA's ratemaking capital structure in this proceeding. CUPA's ratemaking capital structure consists of 52.32% long-term debt and 47.68% common equity as shown on page 1 of Schedule DWD-1.

Q. How does CUPA's ratemaking common equity ratio of 47.68% compare with the equity ratios maintained by the companies in your Utility Proxy Group?

A. CUPA's ratemaking common equity ratio of 47.68% is reasonable and consistent with the range of common equity ratios maintained, on average, by the companies in the Utility Proxy Group on which I base my recommended common equity cost rate. As shown on page 2 of Schedule DWD-2, the common equity ratios of the Utility Proxy Group range from 40.53% to 68.13% in 2019. In my opinion, CUPA's ratemaking equity ratio of 47.68% is appropriate.

Q. What long-term debt cost rate is most appropriate for CUPA in this proceeding?

A. CRU's actual long-term debt cost rate at December 30, 2020 of 5.05% is reasonable and appropriate as CUPA's cost of long-term debt in this proceeding.

VII. COMMON EQUITY COST RATE MODELS

Q. Are your cost of common equity models market-based models?

A. Yes. The DCF model is market-based because market prices are used in developing the dividend yield component of the model. The RPM is market-based because the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of bond/credit risk. In addition, the use of beta coefficients (β) to determine the equity risk premium reflects the market's assessment of market/systematic risk, since beta coefficients are derived from regression analyses of market prices. The Predictive Risk Premium Model ("PRPM") uses monthly market returns in addition to expectations of the risk-free rate. The CAPM is market-based for many of the same reasons that the RPM is market-based (*i.e.*, the use of expected bond yields and beta coefficients). Selection of the comparable risk non-price regulated companies is market-based because it is based on statistics which result from regression analyses of market prices and reflect the market's assessment of total risk.

A. DISCOUNTED CASH FLOW MODEL

Q. What is the theoretical basis of the DCF model?

A. The theory underlying the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be

determined by discounting those cash flows at the cost of capital, or the investors' capitalization rate. DCF theory indicates that an investor buys a stock for an expected total return rate, which is derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate). Mathematically, the dividend yield on market price plus a growth rate equals the capitalization rate, *i.e.*, the total common equity return rate expected by investors.

Q. Which version of the DCF model did you use?

A. I used the single-stage constant growth DCF model.

Q. Please describe the dividend yield you used in your application of the DCF model.

A. The unadjusted dividend yields are based on the proxy companies' dividends as of February 26, 2021, divided by the average of closing market prices for the 60 trading days ending February 26, 2021.[6]

Q. Please explain your adjustment to the dividend yield.

A. Because dividends are paid periodically (quarterly), as opposed to continuously (daily), an adjustment must be made to the dividend yield. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

DCF theory calls for the use of the full growth rate, or D_1, in calculating the dividend yield component of the model. Since the various companies in the Utility Proxy Group increase their quarterly dividend at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the dividend yield component, or $D_{1/2}$. Because the dividend should be representative of the next 12-month period, my adjustment is a conservative approach that does

[6] *See,* Schedule DWD-3, page 1, Column 1.

not overstate the dividend yield. Therefore, the actual average dividend yields in Column 1 on page 1 of Schedule DWD-3 have been adjusted upward to reflect one-half the average projected growth rate shown in Column 6.

Q. Please explain the basis of the growth rates you applied to the Utility Proxy Group in your DCF model.

A. Investors with more limited resources than institutional investors are likely to rely on widely available financial information services, such as *Value Line*, Zacks, Yahoo! Finance, and Bloomberg. Investors realize that analysts have significant insight into the dynamics of the industries and individual companies they analyze, as well as companies' abilities to effectively manage the effects of changing laws and regulations, and ever-changing economic and market conditions. For these reasons, I used analysts' five-year forecasts of EPS growth in my DCF analysis.

Over the long run, there can be no growth in DPS without growth in EPS. Security analysts' earnings expectations have a more significant influence on market prices than dividend expectations. Thus, the use of earnings growth rates in a DCF analysis provides a better match between investors' market price appreciation expectations and the growth rate component of the DCF.

Q. Please summarize the DCF model results.

A. As shown on page 1 of Schedule DWD-3, the mean result of the application of the single-stage DCF model is 8.90%, the median result is 8.85%, and the average of the two is 8.88% for the Utility Proxy Group. In arriving at a conclusion for the DCF-indicated common equity cost rate for the Utility Proxy Group, I have relied on an average of the mean and the median results of the DCF. This approach

takes into consideration all the proxy companies' results, while mitigating the high and low outliers of those individual results.

B. <u>THE RISK PREMIUM MODEL</u>

Q. Please describe the theoretical basis of the RPM.

A. The RPM is based on the fundamental financial principle of risk and return, namely, that investors require greater returns for bearing greater risk. The RPM recognizes that common equity capital has greater investment risk than debt capital, as common equity shareholders are behind debt holders in any claim on a company's assets and earnings. As a result, investors require higher returns from common stocks than from investment in bonds, to compensate them for bearing the additional risk.

While it is possible to directly observe bond returns and yields, investors' required common equity return cannot be directly determined or observed. According to RPM theory, one can estimate a common equity risk premium over bonds (either historically or prospectively), and use that premium to derive a cost rate of common equity. The cost of common equity equals the expected cost rate for long-term debt capital, plus a risk premium over that cost rate, to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings in the event of a liquidation.

Q. Please explain how you derived your indicated cost of common equity based on the RPM.

A. I relied on the results of the application of two risk premium methods. The first method is the PRPM, while the second method is a risk premium model using a total market approach.

Q. Please explain the PRPM.

A. The PRPM, published in the *Journal of Regulatory Economics* and *The Electricity Journal*[7], was developed from the work of Robert F. Engle who shared the Nobel Prize in Economics in 2003 "for methods of analyzing economic time series with time-varying volatility ("ARCH")".[8] Engle found that volatility changes over time and is related from one period to the next, especially in financial markets. Engle discovered that the volatility in prices and returns clusters over time and is therefore highly predictable and can be used to predict future levels of risk and risk premiums.

The PRPM estimates the risk / return relationship directly, as the predicted equity risk premium is generated by the prediction of volatility or risk. The PRPM is not based on an estimate of investor behavior, but rather on the evaluation of the results of that behavior (*i.e.*, the variance of historical equity risk premiums).

The inputs to the model are the historical returns on the common shares of each company in the Utility Proxy Group minus the historical monthly yield on long-term U.S. Treasury securities through February 2021. Using a generalized form of ARCH, known as GARCH, I calculated each Utility Proxy Group company's projected equity risk premium using Eviews© statistical software. When the GARCH Model is applied to the historical return data, it produces a predicted

[7] Autoregressive conditional heteroscedasticity. See "A New Approach for Estimating the Equity Risk Premium for Public Utilities", Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. *The Journal of Regulatory Economics* (December 2011), 40:261-278 and "Comparative Evaluation of the Predictive Risk Premium Model, the Discounted Cash Flow Model and the Capital Asset Pricing Model for Estimating the Cost of Common Equity", Richard A. Michelfelder, Ph.D, Pauline M. Ahern, Dylan W. D'Ascendis, and Frank J. Hanley, *The Electricity Journal* (May 2013), 84-89.

[8] www.nobelprize.org.

GARCH variance series[9] and a GARCH coefficient[10]. Multiplying the predicted monthly variance by the GARCH coefficient, then annualizing it[11], produces the predicted annual equity risk premium. I then added the forecasted 30-year U.S. Treasury Bond yield, 2.48%[12], to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. The 30-year Treasury yield is a consensus forecast derived from the *Blue Chip Financial Forecasts ("Blue Chip")*[13]. The mean PRPM indicated common equity cost rate for the Utility Proxy Group is 11.91%, the median is 10.79%, and the average of the two is 11.35%. Consistent with my reliance on the average of the median and mean results of the DCF, I relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 11.35%.

Q. Please explain the total market approach RPM.

A. The total market approach RPM adds a prospective public utility bond yield to an average of: 1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, and 2) an equity risk premium based on the S&P Utilities Index.

Q. Please explain the basis of the expected bond yield of 3.69% applicable to the Utility Proxy Group.

A. The first step in the total market approach RPM analysis is to determine the expected bond yield. Because both ratemaking and the cost of capital, including common equity cost rate, are prospective in nature, a prospective yield on

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9 Illustrated on Columns 1 and 2 of page 2 of Schedule DWD-4.
10 Illustrated on Column 4 of page 2 of Schedule DWD-4.
11 Annualized Return = (1+Monthly Return)^12 – 1.
12 *See,* Column 6 of page 2 of Schedule DWD-4.
13 *Blue Chip Financial Forecasts*, December 1, 2020 at p. 14 and March 1, 2021 at p. 2.

similarly-rated long-term debt is essential. I rely on a consensus forecast of about 50 economists of the expected yield on Aaa-rated corporate bonds for the six calendar quarters ending with the second calendar quarter of 2022, and the long-term projections for 2022 to 2026, and 2027 to 2031 from *Blue Chip*. As shown on line No. 1 of page 3 of Schedule DWD-4, the average expected yield on Moody's Aaa-rated corporate bonds is 3.19%. In order to derive an expected yield on A2-rated public utility bonds, I make an upward adjustment of 0.45%, which represents a recent spread between Aaa-rated corporate bonds and A2-rated public utility bonds, in order to adjust the expected Aaa-rated corporate bond yield to an equivalent Moody's A2-rated public utility bond.[14] Adding that recent 0.45% spread to the expected Aaa-rated corporate bond yield of 3.19% results in an expected A2-rated public utility bond of 3.64%.

Since the Utility Proxy Group's average Moody's long-term issuer rating is A2/A3, another adjustment to the expected A2-rated public utility bond yield is needed to reflect the difference in bond ratings. An upward adjustment of 0.05%, which represents one-sixth of a recent spread between A2- and Baa2-rated public utility bond yields, is necessary to make the A2-rated prospective bond yield applicable to an A2/A3-rated public utility bond.[15] Adding the 0.05% to the 3.64% prospective A2-rated public utility bond yield results in a 3.69% expected bond yield for the Utility Proxy Group.

[14] As shown on Line No. 2 and explained in Note 2 of page 3 of Schedule DWD-4.
[15] As shown on Line No. 4 and explained in Note 3 on page 3 of Schedule DWD-4.

Table 3: Summary of the Calculation of the Utility Proxy Group Projected Bond Yield[16]

Prospective Yield on Moody's Aaa-Rated Corporate Bonds (*Blue Chip)*	3.19%
Adjustment to Reflect Yield Spread Between Moody's Aaa-Rated Corporate Bonds and Moody's A2-Rated Utility Bonds	0.45%
Adjustment to Reflect the Utility Proxy Group's Average Moody's Bond Rating of A2/A3	0.05%
Prospective Bond Yield Applicable to the Utility Proxy Group	3.69%

To develop the indicated ROE using the total market approach RPM, this prospective bond yield is then added to the average of the three different equity risk premiums described below.

Q. Please explain how the beta-derived equity risk premium is determined.

A. The components of the beta-derived risk premium model are: 1) an expected market equity risk premium over corporate bonds, and 2) the beta coefficient. The derivation of the beta-derived equity risk premium that I applied to the Utility Proxy Group is shown on lines 1 through 9 of page 8 of Schedule DWD-4. The total beta-derived equity risk premium I applied was based on an average of: 1) Ibbotson-based equity risk premiums; 2) *Value Line*-based equity risk premiums; and 3) Bloomberg-based equity risk premium. Each of these is described in turn.

Q. How did you derive a market equity risk premium based on long-term historical data?

A. To derive a historical market equity risk premium, I used the most recent holding period returns for the large company common stocks from the Stocks, Bonds, Bills,

[16] As shown on page 3 of Attachment DWD-4.

and Inflation ("SBBI") 2020 Yearbook ("SBBI – 2020")[17] less the average historical yield on Moody's Aaa/Aa-rated corporate bonds for the period 1928 to 2019. The use of holding period returns over a very long period of time is appropriate because it is consistent with the long-term investment horizon presumed by investing in a going concern, *i.e.*, a company expected to operate in perpetuity.

SBBI's long-term arithmetic mean monthly total return rate on large company common stocks was 11.83% and the long-term arithmetic mean monthly yield on Moody's Aaa/Aa-rated corporate bonds was 6.05%.[18] As shown on line 1 of page 8 of Schedule DWD-4, subtracting the mean monthly bond yield from the total return on large company stocks results in a long-term historical equity risk premium of 5.78%.

I used the arithmetic mean monthly total return rates for the large company stocks and yields (income returns) for the Moody's Aaa/Aa-rated corporate bonds, because they are appropriate for the purpose of estimating the cost of capital as noted in SBBI – 2020.[19] The use of the arithmetic mean return rates and yields is appropriate because historical total returns and equity risk premiums provide insight into the variance and standard deviation of returns needed by investors in estimating future risk when making a current investment. If investors relied on the geometric mean of historical equity risk premiums, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, which is critical to risk analysis.

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17 SBBI Appendix A Tables: Morningstar Stocks, Bonds, Bills, & Inflation 1926-2019.
18 As explained in Note 1 on page 9 of Schedule DWD-4.
19 SBBI – 2020, at 10-22.

Q. Please explain the derivation of the regression-based market equity risk premium.

A. To derive the regression analysis-derived market equity risk premium of 9.15%, shown on line 2 of page 8 of Schedule DWD-4, I used the same monthly annualized total returns on large company common stocks relative to the monthly annualized yields on Moody's Aaa/Aa-rated corporate bonds as mentioned above. The relationship between interest rates and the market equity risk premium was modeled using the observed monthly market equity risk premium as the dependent variable, and the monthly yield on Moody's Aaa/Aa-rated corporate bonds as the independent variable. I used a linear Ordinary Least Squares ("OLS") regression, in which the market equity risk premium is expressed as a function of the Moody's Aaa/Aa-rated corporate bonds yield:

$$RP = \alpha + \beta\ (R_{Aaa/Aa})$$

Q. Please explain the derivation of a PRPM equity risk premium.

A. I used the same PRPM approach described previously to develop another equity risk premium estimate. The inputs to the model are the historical monthly returns on large company common stocks minus the monthly yields on Aaa/Aa-rated corporate bonds during the period from January 1928 through February 2021.[20] Using the previously discussed generalized form of ARCH, known as GARCH, the projected equity risk premium is determined using Eviews© statistical software. The resulting PRPM predicted market equity risk premium is 9.69%.[21]

[20] Data from January 1928-December 2019 is from SBBI – 2019. Data from January – February 2021 is from Bloomberg Professional Services.

[21] Shown on Line No. 3 on page 8 of Schedule DWD-4.

Q. Please explain the derivation of a projected equity risk premium based on *Value Line* data for your RPM analysis.

A. As noted previously, because both ratemaking and the cost of capital are prospective, a prospective market equity risk premium is needed. The derivation of the forecasted or prospective market equity risk premium can be found in Note 4 on page 9 of Schedule DWD-4. Consistent with my calculation of the dividend yield component in my DCF analysis, this prospective market equity risk premium is derived from an average of the three- to five-year median market price appreciation potential by *Value Line* for the 13 weeks ending February 26, 2021, plus an average of the median estimated dividend yield for the common stocks of the 1,700 firms covered in *Value Line*'s Standard Edition.[22]

The average median expected price appreciation is 30%, which translates to an 6.78% annual appreciation, and when added to the average of *Value Line's* median expected dividend yields of 1.97%, equates to a forecasted annual total return rate on the market of 8.75%. The forecasted Aaa-rated bond yield of 3.19% is deducted from the total market return of 8.75%, resulting in an equity risk premium of 5.56%, shown on page 8, line 4 of Schedule DWD-4.

Q. Please explain the derivation of an equity risk premium based on the S&P 500 companies.

A. Using data from *Value Line*, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The expected total return for the S&P 500 is 14.34%.

[22] As explained in detail in page 2, Note 1 of Schedule DWD-5.

Subtracting the prospective yield on Aaa-rated Corporate bonds of 3.19% results in a 11.15% projected equity risk premium.

Q. Please explain the derivation of an equity risk premium based on Bloomberg data.

A. Using data from Bloomberg, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation, identical to the method described above. The expected total return for the S&P 500 is 16.35%. Subtracting the prospective yield on Aaa-rated Corporate bonds of 3.19% results in a 13.16% projected equity risk premium.

Q. What is your conclusion of a beta-derived equity risk premium for use in your RPM analysis?

A. I gave equal weight to the six equity risk premiums in arriving at my conclusion of 9.08%.[23]

Table 4: Summary of the Calculation of the Equity Risk Premium Using Total Market Returns[24]

Historical Spread Between Total Returns of Large Stocks and Aaa and Aa2-Rated Corporate Bond Yields (1928 – 2020)	5.78%
Regression Analysis on Historical Data	9.15%
PRPM Analysis on Historical Data	9.69%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected Aaa Corporate Bond Yields	5.56%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected Aaa Corporate Bond Yields	11.15%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected Aaa Corporate Bond Yields	13.16%
Average	9.08%

[23] *See,* Line No. 7 on page 8 of Schedule DWD-4.
[24] As shown on page 8 of Attachment DWD-4.

After calculating the average market equity risk premium of 9.08%, I adjusted it by beta to account for the risk of the Utility Proxy Group. As discussed below, the beta coefficient is a meaningful measure of prospective relative risk to the market as a whole and is a logical means by which to allocate a company's, or proxy group's, share of the market's total equity risk premium relative to corporate bond yields. As shown on page 1 of Schedule DWD-5, the average of the mean and median beta coefficient for the Utility Proxy Group is 0.84. Multiplying the beta coefficient of the Utility Proxy Group of 0.84 by the market equity risk premium of 9.08% results in a beta-adjusted equity risk premium of 7.63% for the Utility Proxy Group.

Q. How did you derive the equity risk premium based on the S&P Utility Index and Moody's A-rated public utility bonds?

A. I estimated three equity risk premiums based on S&P Utility Index holding returns, and two equity risk premiums based on the expected returns of the S&P Utilities Index, using *Value Line* and Bloomberg data, respectively. Turning first to the S&P Utility Index holding period returns, I derived a long-term monthly arithmetic mean equity risk premium between the S&P Utility Index total returns of 10.74% and monthly A-rated public utility bond yields of 6.53% from 1928 to 2019, to arrive at an equity risk premium of 4.21%.[25] I then used the same historical data to derive an equity risk premium of 6.76% based on a regression of the monthly equity risk premiums. The final S&P Utility Index holding period equity risk premium involved applying the PRPM using the historical monthly equity risk premiums from January

[25] As shown on Line No. 1 on page 12 of Schedule DWD-4.

1928 to February 2021 to arrive at a PRPM-derived equity risk premium of 5.51% for the S&P Utility Index.

I then derived expected total returns on the S&P Utilities Index of 10.74% and 9.36% using data from *Value Line* and Bloomberg, respectively, and subtracted the prospective A2-rated public utility bond yield (3.64%[26]), which results in risk premiums of 7.10% and 5.72%, respectively. As with the market equity risk premiums, I averaged each risk premium to arrive at my utility-specific equity risk premium of 5.86%.

Table 5: Summary of the Calculation of the Equity Risk Premium Using S&P Utility Index Holding Returns[27]

Historical Spread Between Total Returns of the S&P Utilities Index and A2-Rated Utility Bond Yields (1928 – 2020)	4.21%
Regression Analysis on Historical Data	6.76%
PRPM Analysis on Historical Data	5.51%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P Utilities Index less Projected A2 Utility Bond Yields	7.10%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P Utilities Index less Projected A2 Utility Bond Yields	5.72%
Average	5.86%

Q. What is your conclusion of an equity risk premium for use in your total market approach RPM analysis?

A. The equity risk premium I applied to the Utility Proxy Group is 6.75%, which is the average of the beta-derived and the S&P utility equity risk premiums of 7.63% and 5.86%, respectively.[28]

26 Derived on Line No. 3 of page 3 of Schedule DWD-4.
27 As shown on page 12 of Attachment DWD-4.
28 As shown on page 7 of Schedule DWD-4.

Q. What is the indicated RPM common equity cost rate based on the total market approach?

A. As shown on line No. 7 of Schedule DWD-4, page 3, I calculated a common equity cost rate of 10.44% for the Utility Proxy Group based on the total market approach of the RPM.

Table 6: Summary of the Total Market Return Risk Premium Model[29]

Prospective Moody's A2/A3-Rated Utility Bond Applicable to the Utility Proxy Group	3.69%
Prospective Equity Risk Premium	6.75%
Indicated Cost of Common Equity	10.44%

Q. What are the results of your application of the PRPM and the total market approach RPM?

A. As shown on page 1 of Schedule DWD-4, the indicated RPM-derived common equity cost rate is 10.90%, which gives equal weight to the PRPM (11.35%) and the adjusted market approach results (10.44%).

C. THE CAPITAL ASSET PRICING MODEL

Q. Please explain the theoretical basis of the CAPM.

A. CAPM theory defines risk as the co-variability of a security's returns with the market's returns as measured by the beta coefficient (β). A beta coefficient less than 1.0 indicates lower variability than the market as a whole, while a beta coefficient greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all other risk (*i.e.*, all non-market or unsystematic risk) can be eliminated through diversification. The risk that cannot be eliminated

[29] As shown on page 3 of Attachment DWD-4.

through diversification is called market, or systematic, risk. In addition, the CAPM presumes that investors require compensation only for systematic risk, which is the result of macroeconomic and other events that affect the returns on all assets. The model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market as measured by the beta coefficient. The traditional CAPM model is expressed as:

$$R_s = R_f + \beta(R_m - R_f)$$

Where: R_s = Return rate on the common stock;

R_f = Risk-free rate of return;

R_m = Return rate on the market as a whole; and

β = Adjusted beta coefficient (volatility of the security relative to the market as a whole).

Numerous tests of the CAPM have measured the extent to which security returns and beta coefficients are related as predicted by the CAPM, confirming its validity. The empirical CAPM ("ECAPM") reflects the reality that while the results of these tests support the notion that the beta coefficient is related to security returns, the empirical Security Market Line ("SML") described by the CAPM formula is not as steeply sloped as the predicted SML.[30] The ECAPM reflects this empirical reality. Fama and French clearly state regarding Figure 2, below, that "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low." [31]

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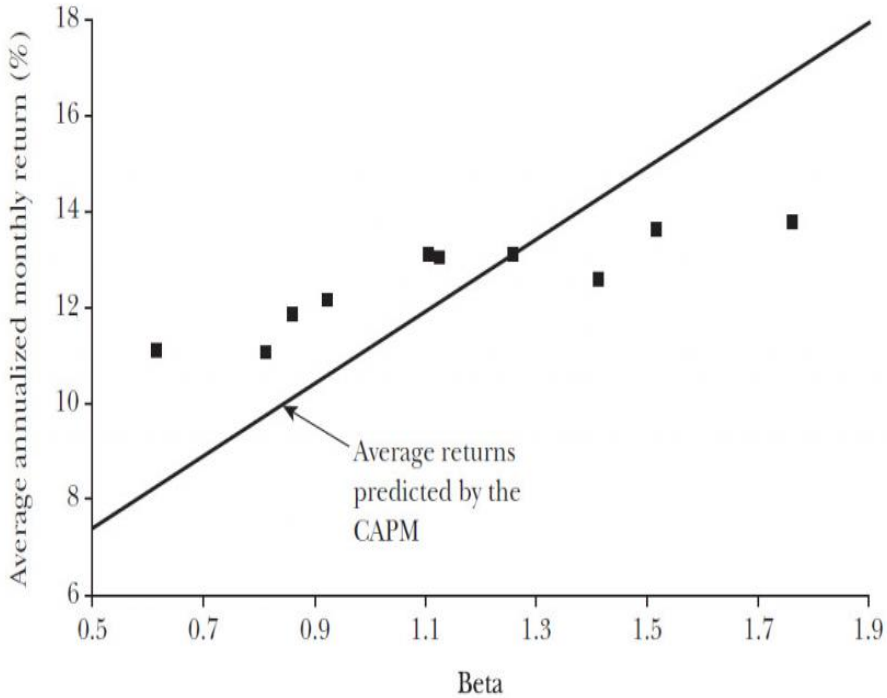
30 Roger A. Morin, PhD, New Regulatory Finance, (Public Utilities Reports, Inc., 2006) at 175.("*Morin*")

31 Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence", *Journal of Economic Perspectives*, Vol. 18, No. 3, Summer 2004 at 33 ("Fama & French"). http://pubs.aeaweb.org/doi/pdfplus/10.1257/0895330042162430.

Figure 2 http://pubs.aeaweb.org/doi/pdfplus/10.1257/0895330042162430

Average Annualized Monthly Return versus Beta for Value Weight Portfolios Formed on Prior Beta, 1928–2003



In addition, Morin observes that while the results of these tests support the notion that beta is related to security returns, the empirical SML described by the CAPM formula is not as steeply sloped as the predicted SML. Morin states:

> With few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.[32]
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,\beta(R_M - R_F) + (1-x)\,\beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. The value of x that best explains the observed relationship [is] Return = 0.0829 +

[32] Morin, at 175.

0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:

$$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$ [33]

Fama and French provide similar support for the ECAPM when they state:

> The early tests firmly reject the Sharpe-Lintner version of the CAPM. There is a positive relation between beta and average return, but it is too 'flat.'… The regressions consistently find that the intercept is greater than the average risk-free rate… and the coefficient on beta is less than the average excess market return… This is true in the early tests… as well as in more recent cross-section regressions tests, like Fama and French (1992).[34]

Finally, Fama and French further note:

> Confirming earlier evidence, the relation between beta and average return for the ten portfolios is much flatter than the Sharpe-Linter CAPM predicts. The returns on low beta portfolios are too high, and the returns on the high beta portfolios are too low. For example, the predicted return on the portfolio with the lowest beta is 8.3 percent per year; the actual return as 11.1 percent. The predicted return on the portfolio with the highest beta is 16.8 percent per year; the actual is 13.7 percent.[35]

Clearly, the justification from Morin, Fama, and French along with their reviews of other academic research on the CAPM, validate the use of the ECAPM. In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the Utility Proxy Group and averaged the results.

Q. What beta coefficients did you use in your CAPM analysis?

A. With respect to the beta coefficient, I considered two methods of calculation: 1) the average of the beta coefficients of the Utility Proxy Group companies reported by Bloomberg Professional Services, and 2) the average of the beta coefficients of

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33 Morin, at 190.
34 Fama & French, at 32.
35 *Ibid.,* at 33.

the Utility Proxy Group companies as reported by *Value Line*. While both of those services adjust their calculated (or "raw") beta coefficients to reflect the tendency of the beta coefficient to regress to the market mean of 1.00, *Value Line* calculates the beta coefficient over a five-year period, while Bloomberg's calculation is based on two years of data.

Q. Please describe your selection of a risk-free rate of return.

A. As shown in Column 5 on page 1 of Schedule DWD-5, the risk-free rate adopted for both applications of the CAPM is 2.48%. This risk-free rate of 2.48% is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the second calendar quarter of 2022, and long-term projections for the years 2022 to 2026 and 2027 to 2031.

Q. Why is the yield on long-term U.S. Treasury bonds appropriate for use as the risk-free rate?

A. The yield on long-term U.S. Treasury Bonds is almost risk-free, and its term is consistent with the long-term cost of capital to public utilities measured by the yields on A2-rated public utility bonds, the long-term investment horizon inherent in utilities' common stocks, and the long-term life of the jurisdictional rate base to which the allowed fair rate of return (*i.e.*, cost of capital) will be applied. In contrast, short-term U.S. Treasury yields are more volatile and largely a function of Federal Reserve monetary policy.

Q. Please explain the estimation of the expected risk premium for the market used in your CAPM analyses.

A. The basis of the market risk premium is explained in detail in note 1 on page 2 of Schedule DWD-5. As discussed previously, the market risk premium is derived from an average of:

(i) Ibbotson-based market risk premiums;

(ii) *Value Line* data-based market risk premiums; and

(iii) Bloomberg data-based market risk premiums.

The long-term income return on U.S. Government Securities of 5.09% was deducted from the SBBI - 2020 monthly historical total market return of 12.10%, which results in an historical market equity risk premium of 7.01%.[36] I applied a linear OLS regression to the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government Securities from SBBI - 2020. That regression analysis yielded a market equity risk premium of 9.81%. The PRPM market equity risk premium is 10.81% and is derived using the PRPM relative to the yields on long-term U.S. Treasury securities from January 1926 through February 2021.

The *Value Line*-derived forecasted total market equity risk premium is derived by deducting the forecasted risk-free rate of 2.48%, discussed above, from the *Value Line* projected total annual market return of 8.75%, resulting in a forecasted total market equity risk premium of 6.27%. The S&P 500 projected market equity risk premium using *Value Line* data is derived by subtracting the

[36] SBBI – 2020, at Appendix A-1 (1) through A-1 (3) and Appendix A-7 (19) through A-7 (21).

projected risk-free rate of 2.48% from the projected total return of the S&P 500 of 14.34%. The resulting market equity risk premium is 11.86%.

The S&P 500 projected market equity risk premium using Bloomberg data is derived by subtracting the projected risk-free rate of 2.48% from the projected total return of the S&P 500 of 16.35%. The resulting market equity risk premium is 13.87%.

These six market risk premiums, when averaged, result in an average total market equity risk premium of 9.94%.

Table 7: Summary of the Calculation of the Market Risk Premium for use in the CAPM[37]

Historical Spread Between Total Returns of Large Stocks and Long-Term Government Bond Yields (1926 – 2020)	7.01%
Regression Analysis on Historical Data	9.81%
PRPM Analysis on Historical Data	10.81%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected 30-Year Treasury Bond Yields	6.27%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected 30-Year Treasury Bond Yields	11.86%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected 30-Year Treasury Bond Yields	13.87%
Average	9.94%

Q. What are the results of your application of the traditional and empirical CAPM to the Utility Proxy Group?

A. As shown on page 1 of Schedule DWD-5, the mean result of my CAPM/ECAPM analysis is 10.79%, the median is 11.29%, and the average of the two is 11.04%.

[37] As shown on page 2 of Schedule DWD-5.

Consistent with my reliance on the average of mean and median DCF results discussed above, the indicated common equity cost rate using the CAPM/ECAPM is 11.04%.

D. COMMON EQUITY COST RATES FOR A PROXY GROUP OF DOMESTIC, NON-PRICE REGULATED COMPANIES BASED ON THE DCF, RPM, AND CAPM

Q. Why did you also consider a proxy group of domestic, non-price regulated companies?

A. In the *Hope* and *Bluefield* cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Since the purpose of rate regulation is to be a substitute for the competition of the marketplace, non-price regulated firms operating in the competitive marketplace make an excellent proxy if they are comparable in total risk to the Utility Proxy Group being used to estimate the cost of common equity. The selection of such domestic, non-price regulated competitive firms theoretically and empirically results in a proxy group which is comparable in total risk to the Utility Proxy Group.

Q. How did you select non-price regulated companies that are comparable in total risk to the Utility Proxy Group?

A. In order to select a proxy group of domestic, non-price regulated companies similar in total risk to the Utility Proxy Group, I relied on the beta coefficients and related statistics derived from *Value Line* regression analyses of weekly market prices over the most recent 260 weeks (*i.e.*, five years). Using these selection criteria resulted in a proxy group of 26 domestic, non-price regulated firms comparable in total risk to the Utility Proxy Group. Total risk is the sum of non-diversifiable market

risk and diversifiable company-specific risks. The criteria used in the selection of the domestic, non-price regulated firms was:

(i) They must be covered by *Value Line Investment Survey* (Standard Edition);

(ii) They must be domestic, non-price regulated companies, *i.e.*, non-utilities;

(iii) Their beta coefficients must lie within plus or minus two standard deviations of the average unadjusted beta coefficient of the Utility Proxy Group; and

(iv) The residual standard errors of the *Value Line* regressions which gave rise to the unadjusted beta coefficients must lie within plus or minus two standard deviations of the average residual standard error of the Utility Proxy Group.

Beta coefficients are a measure of market or systematic risk, which is not diversifiable. The residual standard errors of the regressions were used to measure each firm's company-specific, diversifiable risk. Companies that have similar beta coefficients <u>and</u> similar residual standard errors resulting from the same regression analyses have similar total investment risk.

Q. Have you prepared a schedule which shows the data from which you selected the 26 domestic, non-price regulated companies that are comparable in total risk to the Utility Proxy Group?

A. Yes, the basis of my selection, and both proxy groups' regression statistics, are shown in Schedule DWD-6.

Q. Did you calculate common equity cost rates using the DCF, RPM, and CAPM for the Non-Price Regulated Proxy Group?

A. Yes. Because the DCF, RPM, and CAPM have been applied in an identical manner as described above, I will not repeat the details of the rationale and

application of each model. One exception is in the application of the RPM, where I did not use public utility-specific equity risk premiums, nor did I apply the PRPM to the individual companies.

Page 2 of Schedule DWD-7 contains the derivation of the DCF cost rates. As shown, the indicated common equity cost rate using the DCF for the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group, is 11.05%.

Pages 3 through 5 of DWD-7 contain the data and calculations that support the 11.42% RPM cost rate. As shown on Line No. 1 of page 3 of Schedule DWD-7, the consensus prospective yield on Moody's Baa-rated corporate bonds for the six quarters ending in the second quarter of 2022, and for the years 2022 to 2026 and 2027 to 2031, is 4.11%.[38] Because the Non-Price Regulated Proxy Group has an average Moody's bond rating of Baa1, a downward adjustment of 0.14% to the prospective Baa2-rated bond yield is necessary to reflect the difference in bond ratings.[39] Subtracting 0.14% from the prospective Baa2-rated bond yield of 4.11% is 3.97%.

When the beta-adjusted risk premium of 7.45%[40] relative to the Non-Price Regulated Proxy Group is added to the prospective Baa1-rated corporate bond yield of 3.97%, the indicated RPM cost rate is 11.42%.

Page 6 contains the inputs and calculations that support my indicated CAPM/ECAPM cost rate of 10.82%.

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38 *Blue Chip Financial Forecasts*, December 1, 2020, at p. 14 and March 1, 2021, at p. 2.
39 As demonstrated on Schedule DWD-7, page 3, note 2.
40 Derived on page 5 of Schedule DWD-7.

Q. What is the cost rate of common equity based on the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group?

A. As shown on page 1 of Schedule DWD-7, the results of the DCF, RPM, and CAPM applied to the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group are 11.05%, 11.42%, and 10.82%, respectively. The average of the mean and median of these models is 11.08%, which I used as the indicated common equity cost rate for the Non-Price Regulated Proxy Group.

VIII. CONCLUSION OF COMMON EQUITY COST RATE BEFORE ADJUSTMENT

Q. What is the indicated range of common equity cost rates before adjustment?

A. Based on the results of the application of multiple cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group, the indicated model results are between 8.88% (average of all model results) and 11.08% (maximum of model results).

I used multiple cost of common equity models as primary tools in arriving at my recommended common equity cost rate, because no single model is so inherently precise that it can be relied on solely to the exclusion of other theoretically sound models. The use of multiple models adds reliability to the estimation of the common equity cost rate, and the prudence of using multiple cost of common equity models is supported in both the financial literature and regulatory precedent.

As discussed previously, after determining the indicated range of ROE attributable to a comparable group, there must be an evaluation of relative risk between that group and the target company to determine whether it is appropriate

to apply adjustments to the comparable group's indicated ROE to better reflect the target company's specific risks.

IX. ADJUSTMENT TO THE COMMON EQUITY COST RATE

A. SIZE ADJUSTMENT

Q. Does CUPA's smaller size compared with the Utility Proxy Group increase its business risk?

A. Yes. CUPA's smaller size relative to the Utility Proxy Group companies indicates greater relative business risk for the Company because, all else being equal, size has a material bearing on risk.

Size affects business risk because smaller companies generally are less able to cope with significant events that affect sales, revenues, and earnings. For example, smaller companies face more risk exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few larger customers would have a greater effect on a small company than on a bigger company with a larger, more diverse, customer base.

As further evidence illustrates that smaller firms are riskier, investors generally demand greater returns from smaller firms to compensate for less marketability and liquidity of their securities. Duff & Phelps' 2020 Valuation Handbook – U.S. Guide to Cost of Capital ("D&P - 2020") discusses the nature of the small-size phenomenon, providing an indication of the magnitude of the size premium based on several measures of size. In discussing "Size as a Predictor of Equity Premiums," D&P - 2020 states:

> The size effect is based on the empirical observation that companies of smaller size are associated with greater risk and, therefore, have greater cost of capital [sic]. The "size" of a company is one of the

> most important risk elements to consider when developing cost of equity capital estimates for use in valuing a business simply because size has been shown to be a *predictor* of equity returns. In other words, there is a significant (negative) relationship between size and historical equity returns - as size *decreases*, returns tend to *increase*, and vice versa. (footnote omitted) (emphasis in original)[41]

Furthermore, in "The Capital Asset Pricing Model: Theory and Evidence," Fama and French note size is indeed a risk factor which must be reflected when estimating the cost of common equity. On page 14, they note:

> **. . .** the higher average returns on small stocks and high book-to-market stocks reflect unidentified state variables that produce undiversifiable risks (covariances) in returns not captured in the market return and are priced separately from market betas.[42]

Based on this evidence, Fama and French proposed their three-factor model which includes a size variable in recognition of the effect size has on the cost of common equity.

Also, it is a basic financial principle that the use of funds invested, and not the source of funds, is what gives rise to the risk of any investment.[43] Eugene Brigham, a well-known authority, states:

> A number of researchers have observed that portfolios of small-firms (sic) have earned consistently higher average returns than those of large-firm stocks; this is called the "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; **what the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.** (emphasis added)[44]

Consistent with the financial principle of risk and return discussed above,

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41 Duff & Phelps 2020 Valuation Handbook – U.S. Guide to Cost of Capital, Wiley 2018, at 4-1.
42 Fama & French, at 25-43.
43 Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance (McGraw-Hill Book Company, 1996), at 204-205, 229.
44 Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989), at 623.

increased relative risk due to small size must be considered in the allowed rate of return on common equity. Therefore, the Commission's authorization of a cost rate of common equity in this proceeding must appropriately reflect the unique risks of CUPA, including its small size, which is justified and supported above by evidence in the financial literature.

Q. Should the Commission consider CUPA as a stand-alone company?

A. Yes, it should. Because it is CUPA's rate base to which the overall rates of return set forth in this proceeding will be applied, they should be evaluated as a stand-alone entity. To do otherwise would be discriminatory, confiscatory, and inaccurate. It is also a basic financial precept that the use of the funds invested give rise to the risk of the investment. As Brealey and Myers state:

> The true cost of capital depends on the use to which the capital is put.
>
> ***
>
> *Each project should be evaluated at its own opportunity cost of capital; the true cost of capital depends on the use to which the capital is put*. (italics and bold in original) [45]

Morin confirms Brealey and Myers when he states:

> Financial theory clearly establishes that the cost of equity is the risk-adjusted opportunity cost of the investors and not the cost of the specific capital sources employed by the investors. The true cost of capital depends on the use to which the capital is put and not on its source. The Hope and Bluefield doctrines have made clear that the relevant considerations in calculating a company's cost of capital are the alternatives available to investors and the returns and risks associated with those alternatives.[46]

Additionally, Levy and Sarnat state:

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[45] Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, McGraw-Hill, Third Edition, 1988, at pp. 173, 198.

[46] Morin, at 523.

> The firm's cost of capital is the discount rate employed to discount the firm's average cash flow, hence obtaining the value of the firm. It is also the weighted average cost of capital, as we shall see below. The weighted average cost of capital should be employed for project evaluation… only in cases where the risk profile of the new projects is a "carbon copy" of the risk profile of the firm[47]

Although Levy and Sarnat discuss a project's cost of capital relative to a firm's cost of capital, these principles apply equally to the use of a proxy group-based cost of capital. Each company must be viewed on its own merits, regardless of the source of its equity capital. As *Bluefield* clearly states:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; [48]

In other words, it is the "risks and uncertainties" surrounding the property employed for the "convenience of the public" which determines the appropriate level of rates. In this proceeding, the property employed "for the convenience of the public" is the rate base of CUPA. Thus, it is only the risk of investment in CUPA that is relevant to the determination of the cost of common equity to be applied to the common equity-financed portion of that rate base.

In addition, in the Fama and French article previously cited, the authors[49] proposed that their three-factor model include the SMB (Small Minus Big) factor, which indicates that small capitalization firms are more risky than large capitalization firms, confirming that size is a risk factor which must be taken into

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47 Haim Levy & Marshall Sarnat, Capital Investment and Financial Decisions, Prentice/Hall International, 1986, at 465.

48 *Bluefield*, at 6.

49 Fama & French, at 39.

account in estimating the cost of common equity.

Consistent with the financial principle of risk and return discussed previously, and the stand-alone nature of ratemaking, an upward adjustment must be applied to the indicated cost of common equity derived from the cost of equity models of the proxy groups used in this proceeding.

Q. Is there a way to quantify a relative risk adjustment due to CUPA's small size relative to the Utility Proxy Group?

A. Yes. The Company has greater relative risk than the average company in the Utility Proxy Group because of its smaller size compared with the group, as measured by an estimated market capitalization of common equity for CUPA (whose common stock is not publicly-traded).

Table 8: Size as Measured by Market Capitalization for the Company and the Utility Proxy Group

	Market Capitalization* ($ Millions)	**Times Greater Than the Company**
CUPA	$36.935	
Utility Proxy Group	$6,259.961	169.5x
*From page 1 of Schedule DWD-8.		

The Company's estimated market capitalization was at $36.935 million as of February 26, 2021, compared with the market capitalization of the average water company in the Utility Proxy Group of $6.259 billion as of February 26, 2021. The Utility Proxy Group's market capitalization is 169.5 times the size of CUPA's estimated market capitalization.

As a result, it is necessary to upwardly adjust the indicated range of common equity cost rates to reflect CUPA's greater risk due to its smaller relative

size. The determination is based on the size premiums for portfolios of New York Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked by deciles for the 1926 to 2019 period. The average size premium for the Utility Proxy Group with a market capitalization of $6.259 billion falls in the 4th decile, while CUPA's market capitalization of $36.935 million places the Company in the 10th decile. The size premium spread between the 4th decile and the 10th decile is 4.26%. Even though a 4.26% upward size adjustment is indicated, I apply a size premium of 1.00% to CUPA's indicated range of common equity cost rates.

Q. Since CUPA is a wholly-owned subsidiary of CRU, why is the size of CRU not more appropriate to use when determining the size adjustment?

A. As discussed above, the return derived in this proceeding will not apply to CRU as a whole, but only CUPA. CRU is the sum of its constituent parts, including those constituent parts' returns on common equity. Potential investors in CRU are aware that it is a combination of operations in each state, and that each state's operations experience the operating risks specific to their jurisdiction. The market's expectation of CRU's return is commensurate with the realities of its composite operations in each of the states in which it operates.

Q. What is the indicated range of common equity cost rates after adjustment for CUPA's smaller size relative to the Utility Proxy Group?

After applying the 1.00% size adjustment to the indicated range of common equity cost rates between 8.88% and 11.08%, based on the Utility Proxy Group results, a range of common equity cost rates between 9.88% and 12.08% is applicable to CUPA. From that range, I recommend the Commission approve an ROE of 10.35%.

X. CONCLUSION OF COMMON EQUITY COST RATE

Q. What is your recommended common equity cost rate for CUPA?

Given the actual capital structure ending December 31, 2020 which consists of 52.32% long-term debt at an embedded debt cost rate of 5.05% and 47.68% common equity at my recommended ROE of 10.35%, I conclude that an appropriate return on investor-supplied capital for the Company is 7.58%. A common equity cost rate of 10.35% is consistent with the *Hope* and *Bluefield* standard of a just and reasonable return which ensures the integrity of presently invested capital and enables the attraction of needed new capital on reasonable terms. It also ensures that CUPA will be able to continue providing safe, adequate, and reliable service to the benefit of customers. Thus, it balances the interests of both customers and the Company.

Q. In your opinion, is your proposed common equity cost rate of 10.35% fair and reasonable to CUPA, its shareholders, and its customers?

A. Yes, it is.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Appendix A – D'Ascendis Resume & Testimony Listing

scottmadden
MANAGEMENT CONSULTANTS

Appendix A - Resume & Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Partner

Summary

Dylan is an experienced consultant and a Certified Rate of Return Analyst (CRRA) and Certified Valuation Analyst (CVA). He has served as a consultant for investor-owned and municipal utilities and authorities for 13 years. Dylan has extensive experience in rate of return analyses, class cost of service, rate design, and valuation for regulated public utilities. He has testified as an expert witness in the subjects of rate of return, cost of service, rate design, and valuation before 30 regulatory commissions in the U.S., one Canadian province, and an American Arbitration Association panel.

He also maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured.

Areas of Specialization

- Regulation and Rates
- Utilities
- Mutual Fund Benchmarking
- Capital Market Risk
- Financial Modeling
- Valuation
- Regulatory Strategy
- Rate Case Support
- Rate of Return
- Cost of Service
- Rate Design

Recent Expert Testimony Submission/Appearances

Jurisdiction	***Topic***
Massachusetts Department of Public Utilities	Rate of Return
New Jersey Board of Public Utilities	Rate of Return
Hawaii Public Utilities Commission	Cost of Service, Rate Design
South Carolina Public Service Commission	Return on Common Equity
American Arbitration Association	Valuation

Recent Assignments

- Provided expert testimony on the cost of capital for ratemaking purposes before numerous state utility regulatory agencies
- Maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured
- Sponsored valuation testimony for a large municipal water company in front of an American Arbitration Association Board to justify the reasonability of their lease payments to the City
- Co-authored a valuation report on behalf of a large investor-owned utility company in response to a new state regulation which allowed the appraised value of acquired assets into rate base

Recent Publications and Speeches

- Co-Author of: "Decoupling, Risk Impacts and the Cost of Capital", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. The Electricity Journal, March, 2020.
- Co-Author of: "Decoupling Impact and Public Utility Conservation Investment", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. Energy Policy Journal, 130 (2019), 311-319.
- "Establishing Alternative Proxy Groups", before the Society of Utility and Regulatory Financial Analysts: 51st Financial Forum, April 4, 2019, New Orleans, LA.
- "Past is Prologue: Future Test Year", Presentation before the National Association of Water Companies 2017 Southeast Water Infrastructure Summit, May 2, 2017, Savannah, GA.
- Co-author of: "Comparative Evaluation of the Predictive Risk Premium Model™, the Discounted Cash Flow Model and the Capital Asset Pricing Model", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University, Pauline M. Ahern, and Frank J. Hanley, The Electricity Journal, May, 2013.
- "Decoupling: Impact on the Risk and Cost of Common Equity of Public Utility Stocks", before the Society of Utility and Regulatory Financial Analysts: 45th Financial Forum, April 17-18, 2013, Indianapolis, IN.

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Regulatory Commission of Alaska				
Alaska Power Company	09/20	Alaska Power Company; Goat Lake Hydro, Inc.; BBL Hydro, Inc.	Tariff Nos. TA886-2; TA6-521; TA4-573	Capital Structure
Alaska Power Company	07/16	Alaska Power Company	Docket No. TA857-2	Rate of Return
Alberta Utilities Commission				
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	01/20	AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	2021 Generic Cost of Capital, Proceeding ID. 24110	Rate of Return
Arizona Corporation Commission				
EPCOR Water Arizona, Inc.	06/20	EPCOR Water Arizona, Inc.	Docket No. WS-01303A-20-0177	Rate of Return
Arizona Water Company	12/19	Arizona Water Company – Western Group	Docket No. W-01445A-19-0278	Rate of Return
Arizona Water Company	08/18	Arizona Water Company – Northern Group	Docket No. W-01445A-18-0164	Rate of Return
Colorado Public Utilities Commission				
Summit Utilities, Inc.	04/18	Colorado Natural Gas Company	Docket No. 18AL-0305G	Rate of Return
Atmos Energy Corporation	06/17	Atmos Energy Corporation	Docket No. 17AL-0429G	Rate of Return
Delaware Public Service Commission				
Delmarva Power & Light Co.	11/20	Delmarva Power & Light Co.	Docket No. 20-0149 (Electric)	Return on Equity
Delmarva Power & Light Co.	10/20	Delmarva Power & Light Co.	Docket No. 20-0150 (Gas)	Return on Equity
Tidewater Utilities, Inc.	11/13	Tidewater Utilities, Inc.	Docket No. 13-466	Capital Structure
Public Service Commission of the District of Columbia				
Washington Gas Light Company	09/20	Washington Gas Light Company	Formal Case No. 1162	Rate of Return
Federal Energy Regulatory Commission				
LS Power Grid California, LLC	10/20	LS Power Grid California, LLC	Docket No. ER21-195-000	Rate of Return
Florida Public Service Commission				
Tampa Electric Company	04/21	Tampa Electric Company	Docket No. 20210034-EI	Return on Equity
Peoples Gas System	09/20	Peoples Gas System	Docket No. 20200051-GU	Rate of Return
Utilities, Inc. of Florida	06/20	Utilities, Inc. of Florida	Docket No. 20200139-WS	Rate of Return
Hawaii Public Utilities Commission				
Launiupoko Irrigation Company, Inc.	12/20	Launiupoko Irrigation Company, Inc.	Docket No. 2020-0217 / Transferred to 2020-0089	Capital Structure
Lanai Water Company, Inc.	12/19	Lanai Water Company, Inc.	Docket No. 2019-0386	Cost of Service / Rate Design
Manele Water Resources, LLC	08/19	Manele Water Resources, LLC	Docket No. 2019-0311	Cost of Service / Rate Design
Kaupulehu Water Company	02/18	Kaupulehu Water Company	Docket No. 2016-0363	Rate of Return
Aqua Engineers, LLC	05/17	Puhi Sewer & Water Company	Docket No. 2017-0118	Cost of Service / Rate Design
Hawaii Resources, Inc.	09/16	Laie Water Company	Docket No. 2016-0229	Cost of Service / Rate Design
Illinois Commerce Commission				
Utility Services of Illinois, Inc.	02/21	Utility Services of Illinois, Inc.	Docket No. 21-0198	Rate of Return

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Ameren Illinois Company d/b/a Ameren Illinois	07/20	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 20-0308	Return on Equity
Utility Services of Illinois, Inc.	11/17	Utility Services of Illinois, Inc.	Docket No. 17-1106	Cost of Service / Rate Design
Aqua Illinois, Inc.	04/17	Aqua Illinois, Inc.	Docket No. 17-0259	Rate of Return
Utility Services of Illinois, Inc.	04/15	Utility Services of Illinois, Inc.	Docket No. 14-0741	Rate of Return
Indiana Utility Regulatory Commission				
Aqua Indiana, Inc.	03/16	Aqua Indiana, Inc. Aboite Wastewater Division	Docket No. 44752	Rate of Return
Twin Lakes, Utilities, Inc.	08/13	Twin Lakes, Utilities, Inc.	Docket No. 44388	Rate of Return
Kansas Corporation Commission				
Atmos Energy	07/19	Atmos Energy	19-ATMG-525-RTS	Rate of Return
Kentucky Public Service Commission				
Bluegrass Water Utility Operating Company	10/20	Bluegrass Water Utility Operating Company	2020-00290	Return on Equity
Louisiana Public Service Commission				
Southwestern Electric Power Company	12/20	Southwestern Electric Power Company	Docket No. U-35441	Return on Equity
Atmos Energy	04/20	Atmos Energy	Docket No. U-35535	Rate of Return
Louisiana Water Service, Inc.	06/13	Louisiana Water Service, Inc.	Docket No. U-32848	Rate of Return
Maryland Public Service Commission				
Washington Gas Light Company	08/20	Washington Gas Light Company	Case No. 9651	Rate of Return
FirstEnergy, Inc.	08/18	Potomac Edison Company	Case No. 9490	Rate of Return
Massachusetts Department of Public Utilities				
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Elec.)	D.P.U. 19-130	Rate of Return
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Gas)	D.P.U. 19-131	Rate of Return
Liberty Utilities	07/15	Liberty Utilities d/b/a New England Natural Gas Company	Docket No. 15-75	Rate of Return
Minnesota Public Utilities Commission				
Northern States Power Company	11/20	Northern States Power Company	Docket No. E002/GR-20-723	Rate of Return
Mississippi Public Service Commission				
Atmos Energy	03/19	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Atmos Energy	07/18	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Missouri Public Service Commission				
Spire Missouri, Inc.	12/20	Spire Missouri, Inc.	Case No. GR-2021-0108	Return on Equity
Indian Hills Utility Operating Company, Inc.	10/17	Indian Hills Utility Operating Company, Inc.	Case No. SR-2017-0259	Rate of Return
Raccoon Creek Utility Operating Company, Inc.	09/16	Raccoon Creek Utility Operating Company, Inc.	Docket No. SR-2016-0202	Rate of Return
Public Utilities Commission of Nevada				
Southwest Gas Corporation	08/20	Southwest Gas Corporation	Docket No. 20-02023	Return on Equity
New Hampshire Public Utilities Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Aquarion Water Company of New Hampshire, Inc.	12/20	Aquarion Water Company of New Hampshire, Inc.	Docket No. DW 20-184	Rate of Return
New Jersey Board of Public Utilities				
Atlantic City Electric Company	12/20	Atlantic City Electric Company	Docket No. ER20120746	Return on Equity
FirstEnergy	02/20	Jersey Central Power & Light Co.	Docket No. ER20020146	Rate of Return
Aqua New Jersey, Inc.	12/18	Aqua New Jersey, Inc.	Docket No. WR18121351	Rate of Return
Middlesex Water Company	10/17	Middlesex Water Company	Docket No. WR17101049	Rate of Return
Middlesex Water Company	03/15	Middlesex Water Company	Docket No. WR15030391	Rate of Return
The Atlantic City Sewerage Company	10/14	The Atlantic City Sewerage Company	Docket No. WR14101263	Cost of Service / Rate Design
Middlesex Water Company	11/13	Middlesex Water Company	Docket No. WR1311059	Capital Structure
New Mexico Public Regulation Commission				
Southwestern Public Service Company	01/21	Southwestern Public Service Company	Case No. 20-00238-UT	Return on Equity
North Carolina Utilities Commission				
Piedmont Natural Gas Co.Inc.	03/21	Piedmont Natural Gas Co., Inc.	Docket No. G-9, Sub 781	Return on Equity
Duke Energy Carolinas, LLC	07/20	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1214	Return on Equity
Duke Energy Progress, LLC	07/20	Duke Energy Progress, LLC	Docket No. E-2, Sub 1219	Return on Equity
Aqua North Carolina, Inc.	12/19	Aqua North Carolina, Inc.	Docket No. W-218 Sub 526	Rate of Return
Carolina Water Service, Inc.	06/19	Carolina Water Service, Inc.	Docket No. W-354 Sub 364	Rate of Return
Carolina Water Service, Inc.	09/18	Carolina Water Service, Inc.	Docket No. W-354 Sub 360	Rate of Return
Aqua North Carolina, Inc.	07/18	Aqua North Carolina, Inc.	Docket No. W-218 Sub 497	Rate of Return
North Dakota Public Service Commission				
Northern States Power Company	11/20	Northern States Power Company	Case No. PU-20-441	Rate of Return
Public Utilities Commission of Ohio				
Aqua Ohio, Inc.	05/16	Aqua Ohio, Inc.	Docket No. 16-0907-WW-AIR	Rate of Return
Pennsylvania Public Utility Commission				
Valley Energy, Inc.	07/19	C&T Enterprises	Docket No. R-2019-3008209	Rate of Return
Wellsboro Electric Company	07/19	C&T Enterprises	Docket No. R-2019-3008208	Rate of Return
Citizens' Electric Company of Lewisburg	07/19	C&T Enterprises	Docket No. R-2019-3008212	Rate of Return
Steelton Borough Authority	01/19	Steelton Borough Authority	Docket No. A-2019-3006880	Valuation
Mahoning Township, PA	08/18	Mahoning Township, PA	Docket No. A-2018-3003519	Valuation
SUEZ Water Pennsylvania Inc.	04/18	SUEZ Water Pennsylvania Inc.	Docket No. R-2018-000834	Rate of Return
Columbia Water Company	09/17	Columbia Water Company	Docket No. R-2017-2598203	Rate of Return
Veolia Energy Philadelphia, Inc.	06/17	Veolia Energy Philadelphia, Inc.	Docket No. R-2017-2593142	Rate of Return
Emporium Water Company	07/14	Emporium Water Company	Docket No. R-2014-2402324	Rate of Return
Columbia Water Company	07/13	Columbia Water Company	Docket No. R-2013-2360798	Rate of Return
Penn Estates Utilities, Inc.	12/11	Penn Estates, Utilities, Inc.	Docket No. R-2011-2255159	Capital Structure / Long-Term Debt Cost Rate

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
South Carolina Public Service Commission				
Blue Granite Water Co.	12/19	Blue Granite Water Company	Docket No. 2019-292-WS	Rate of Return
Carolina Water Service, Inc.	02/18	Carolina Water Service, Inc.	Docket No. 2017-292-WS	Rate of Return
Carolina Water Service, Inc.	06/15	Carolina Water Service, Inc.	Docket No. 2015-199-WS	Rate of Return
Carolina Water Service, Inc.	11/13	Carolina Water Service, Inc.	Docket No. 2013-275-WS	Rate of Return
United Utility Companies, Inc.	09/13	United Utility Companies, Inc.	Docket No. 2013-199-WS	Rate of Return
Utility Services of South Carolina, Inc.	09/13	Utility Services of South Carolina, Inc.	Docket No. 2013-201-WS	Rate of Return
Tega Cay Water Services, Inc.	11/12	Tega Cay Water Services, Inc.	Docket No. 2012-177-WS	Capital Structure
Tennessee Public Utility Commission				
Piedmont Natural Gas Company	07/20	Piedmont Natural Gas Company	Docket No. 20-00086	Return on Equity
Public Utility Commission of Texas				
Southwestern Public Service Company	02/21	Southwestern Public Service Company	Docket No. 51802	Return on Equity
Southwestern Electric Power Company	10/20	Southwestern Electric Power Company	Docket No. 51415	Rate of Return
Virginia State Corporation Commission				
Virginia Natural Gas, Inc.	04/21	Virginia Natural Gas, Inc.	PUR-2020-00095	Return on Equity
Massanutten Public Service Corporation	12/20	Massanutten Public Service Corporation	PUE-2020-00039	Return on Equity
Aqua Virginia, Inc.	07/20	Aqua Virginia, Inc.	PUR-2020-00106	Rate of Return
WGL Holdings, Inc.	07/18	Washington Gas Light Company	PUR-2018-00080	Rate of Return
Atmos Energy Corporation	05/18	Atmos Energy Corporation	PUR-2018-00014	Rate of Return
Aqua Virginia, Inc.	07/17	Aqua Virginia, Inc.	PUR-2017-00082	Rate of Return
Massanutten Public Service Corp.	08/14	Massanutten Public Service Corp.	PUE-2014-00035	Rate of Return / Rate Design

CUPA Exhibit DWD

Community Utilities of Pennsylvania, Inc.
Table of Contents
Supporting Schedules Accompanying the Direct Testimony of
Dylan W. D'Ascendis, CRRA, CVA

	Schedule
Summary of Cost of Capital and Fair Rate of Return	DWD-1
Financial Profile of and Capital Structures of the Utility Proxy Group	DWD-2
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model	DWD-3
Indicated Common Equity Cost Rate Using the Risk Premium Model	DWD-4
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model	DWD-5
Basis of Selection for the Non-Price Regulated Companies Comparable in Total Risk to the Utility Proxy Group	DWD-6
Cost of Common Equity Models Applied to the Non-Price Regulated Proxy Group	DWD-7
Estimated Market Capitalization for Community Utilities of Pennsylvania, Inc. and the Utility Proxy Group	DWD-8

Community Utilities of Pennsylvania, Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at December 31, 2020

Type Of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	(1)	2.64%
Common Equity	47.68%	10.35%	(2)	4.94%
Total	100.00%			7.58%

Notes:

(1) Company-provided.
(2) From page 2 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Seven Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	8.88%
2.	Risk Premium Model (RPM) (2)	10.90%
3.	Capital Asset Pricing Model (CAPM) (3)	11.04%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	11.08%
5.	Indicated Range of Common Equity Cost Rates before Adjustment for Unique Risk	8.88% - 11.08%
6.	Business Risk Adjustment (5)	1.00%
7.	Indicated Range of Common Equity Cost Rates after Adjustment	9.88% - 12.08%
8.	Recommended Common Equity Cost Rate	10.35%

Notes:
(1) From Schedule DWD-3.
(2) From page 1 of Schedule DWD-4.
(3) From page 1 of Schedule DWD-5.
(4) From page 1 of Schedule DWD-7.
(5) Business risk adjustment to reflect CUPA's unique risk compared to the Utility Proxy Group as detailed in the accompanying direct testimony.

Proxy Group of Seven Water Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2015 - 2019, Inclusive

	2019	2018	2017	2016	2015	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
Capitalization Statistics						
Amount of Capital Employed						
Total Permanent Capital	$3,888.223	$3,208.636	$2,837.657	$2,680.018	$2,535.795	
Short-Term Debt	$189.862	$184.221	$185.250	$152.691	$106.277	
Total Capital Employed	$4,078.085	$3,392.857	$3,022.907	$2,832.709	$2,642.072	
Indicated Average Capital Cost Rates (2)						
Total Debt	4.30 %	4.75 %	4.83 %	4.94 %	5.08 %	
Preferred Stock	5.84 %	5.92 %	5.91 %	5.91 %	5.91 %	
Capital Structure Ratios						
Based on Total Permanent Capital:						
Long-Term Debt	47.17 %	45.15 %	45.58 %	46.14 %	46.49 %	46.11 %
Preferred Stock	0.06	0.09	0.10	0.11	0.11	0.09
Common Eqity	52.77	54.76	54.32	53.75	53.40	53.80
Total	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Based on Total Capital:						
Total Debt, Including Short-Term Debt	50.61 %	48.37 %	48.93 %	48.42 %	47.77 %	48.82 %
Preferred Stock	0.06	0.08	0.09	0.10	0.11	0.09
Common Equity	49.34	51.54	50.98	51.47	52.12	51.09
Total	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Financial Statistics						
Financial Ratios - Market Based						
Earnings / Price Ratio	2.67 %	6.31 %	7.91 %	3.97 %	4.59 %	5.09 %
Market / Average Book Ratio	340.26	289.89	288.75	280.21	229.70	285.76
Dividend Yield	1.77	3.74	3.69	2.15	2.62	2.79
Dividend Payout Ratio	72.32	60.08	55.80	56.03	57.45	60.34
Rate of Return on Average Book Common Equity	9.49 %	10.12 %	11.31 %	10.93 %	10.39 %	10.45 %
Total Debt / EBITDA (3)	5.54 x	4.22 x	3.42 x	3.41 x	3.42 x	4.00 x
Funds from Operations / Total Debt (4)	14.49 %	21.37 %	22.87 %	23.65 %	25.81 %	21.64 %
Total Debt / Total Capital	50.61 %	48.37 %	48.93 %	48.42 %	47.77 %	48.82 %

Notes:
(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.
(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.
(3) Total debt relative to EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization).
(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of total debt.

Source of Information: Company Annual Forms 10-K

Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Seven Water Companies
2015 - 2019, Inclusive

	2019	2018	2017	2016	2015	5 YEAR AVERAGE
American States Water Company						
Long-Term Debt	31.87 %	36.54 %	37.75 %	39.40 %	41.15 %	37.34 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	68.13	63.46	62.25	60.60	58.85	62.66
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American Water Works Company, Inc.						
Long-Term Debt	58.59 %	56.55 %	55.81 %	54.74 %	53.89 %	55.92 %
Preferred Stock	0.03	0.05	0.07	0.09	0.11	0.07
Common Equity	41.38	43.40	44.12	45.17	46.00	44.01
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	50.90 %	52.74 %	43.40 %	45.83 %	44.69 %	47.51 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	49.10	47.26	56.60	54.17	55.31	52.49
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Essential Utilities, Inc.						
Long-Term Debt	44.23 %	56.06 %	52.26 %	50.81 %	50.76 %	50.82 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	55.77	43.94	47.74	49.19	49.24	49.18
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	42.20 %	38.94 %	38.65 %	38.91 %	40.44 %	39.83 %
Preferred Stock	0.37	0.59	0.64	0.67	0.69	0.59
Common Equity	57.43	60.47	60.71	60.42	58.87	59.58
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
SJW Group						
Long-Term Debt	59.47 %	32.67 %	48.20 %	50.69 %	50.03 %	48.21 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	40.53	67.33	51.80	49.31	49.97	51.79
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	42.95 %	42.52 %	43.02 %	42.60 %	44.46 %	43.11 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	57.05	57.48	56.98	57.40	55.54	56.89
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Seven Water Companies						
Long-Term Debt	47.17 %	45.15 %	45.58 %	46.14 %	46.49 %	46.11 %
Preferred Stock	0.06	0.09	0.10	0.11	0.11	0.09
Common Equity	52.77	54.76	54.32	53.75	53.40	53.80
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information
Annual Forms 10-K

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Seven Water Companies

Proxy Group of Seven Water Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Yahoo! Finance Projected Five Year Growth in EPS	[5] Bloomberg Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth in EPS (3)	[7] Adjusted Dividend Yield (4)	[8] Indicated Common Equity Cost Rate (5)
American States Water Company	1.71 %	6.50 %	4.90 %	4.85 %	6.00 %	5.56 %	1.76 %	7.32 %
American Water Works Company, Inc.	1.42	8.50	8.10	8.40	NA	8.33	1.48	9.81
California Water Service Group	1.68	8.00	NA	10.75	9.00	9.25	1.76	11.01
Essential Utilities, Inc.	2.15	7.00	6.30	6.40	6.84	6.63	2.22	8.85
Middlesex Water Company	1.47	7.00	NA	2.70	NA	4.85	1.51	6.36
SJW Group	2.01	10.50	14.00	5.50	7.00	9.25	2.10	11.35
York Water Company	1.64	7.00	NA	4.90	NA	5.95	1.69	7.64
							Average	8.90 %
							Median	8.85 %
							Average of Mean and Median	8.88 %

NA= Not Available

Notes:

(1) Indicated dividend at 02/26/2021 divided by the average closing price of the last 60 trading days ending 02/26/2021 for each company.

(2) From pages 2 through 8 of this Schedule.

(3) Average of columns 2 through 4 excluding negative growth rates.

(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Company, 1.71% x (1+(1/2 x 5.56%)) = 1.76%.

(5) Column 6 + Column 7.

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 02/26/2021
www.yahoo.com Downloaded on 02/26/2021
Bloomberg Professional Services

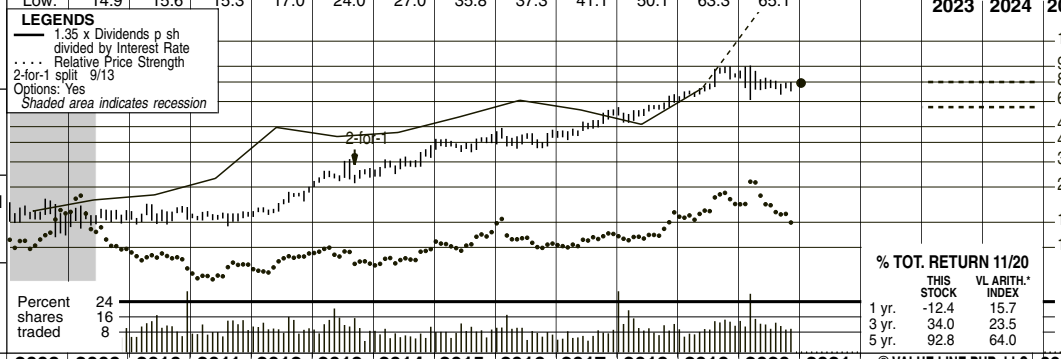
AMER. STATES WATER NYSE-AWR

RECENT PRICE 79.15 | P/E RATIO 34.0 (Trailing: 35.3 Median: 22.0) | RELATIVE P/E RATIO 1.60 | DIV'D YLD 1.8% | VALUE LINE

TIMELINESS 4 Lowered 12/11/20
SAFETY 2 Raised 7/20/12
TECHNICAL 4 Lowered 12/25/20
BETA .65 (1.00 = Market)

High:	19.4	19.8	18.2	24.1	33.1	38.7	44.1	47.2	58.4	69.6	96.0	96.6
Low:	14.9	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1	63.3	65.1

Target Price Range 2023 | 2024 | 2025



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$65-$124	$95 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	80	(Nil)	3%
Low	60	(-25%)	-4%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	125	135	121
to Sell	166	129	135
Hld's(000)	26162	25635	25731

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-12.4	15.7
3 yr.	34.0	23.5
5 yr.	92.8	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	*12.95*	*13.40*	Revenues per sh	*16.40*
1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	*3.25*	*3.50*	"Cash Flow" per sh	*4.50*
.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	*2.25*	*2.40*	Earnings per sh A	*2.90*
.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	*1.28*	*1.40*	Div'd Decl'd per sh B■	*1.85*
2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	*3.40*	*3.60*	Cap'l Spending per sh	*3.75*
7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	*17.30*	*18.50*	Book Value per sh D	*21.35*
33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	*37.00*	*37.25*	Common Shs Outst'g C	*37.50*
23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	*35.5*		Avg Ann'l P/E Ratio	*23.5*
1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.87	*1.79*		Relative P/E Ratio	*1.30*
3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	*1.6%*		Avg Ann'l Div'd Yield	*2.6%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $440.7 mill. **Due in 5 Yrs** $6.9 mill.
LT Debt $440.3 mill. **LT Interest** $25.0 mill.
(41% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.7 mill.
Pension Assets-12/19 $192.5 mill.
Oblig. $231.9 mill.
Pfd Stock None

Common Stock 36,889,061 shs.
as of 10/30/20

MARKET CAP: $2.9 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
398.9	419.3	466.9	472.1	465.8	458.6	436.1	440.6	436.8	473.9	*480*	*500*	Revenues ($mill)	*615*
41.4	42.0	54.1	62.7	61.1	60.5	59.7	69.4	63.9	84.3	*83.0*	*89.0*	Net Profit ($mill)	*110*
43.2%	41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	*25.0%*	*23.0%*	Income Tax Rate	*23.0%*
5.8%	2.0%	2.5%	- -	- -	- -	- -	- -	2.5%	- -	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
44.3%	45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	*41.0%*	*41.5%*	Long-Term Debt Ratio	*49.5%*
55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	*49.0%*	*48.5%*	Common Equity Ratio	*51.5%*
677.4	749.1	787.0	818.4	832.6	791.5	815.3	854.9	938.4	1082.5	*1085*	*1180*	Total Capital ($mill)	*1565*
855.0	896.5	917.8	981.5	1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	*1495*	*1575*	Net Plant ($mill)	*1780*
7.6%	7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	*9.0%*	*8.5%*	Return on Total Cap'l	*8.5%*
11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	*13.0%*	*13.0%*	Return on Shr. Equity	*14.0%*
11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	*13.0%*	*13.0%*	Return on Com Equity	*14.0%*
5.8%	5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	*6.0%*	*5.5%*	Retained to Com Eq	*5.0%*
47%	49%	45%	47%	53%	54%	56%	52%	61%	51%	*57%*	*58%*	All Div'ds to Net Prof	*64%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	7.1	1.3	8.1
Accts Receivable	23.4	20.9	33.7
Other	101.0	100.3	97.6
Current Assets	131.5	122.5	139.4
Accts Payable	59.5	55.6	53.6
Debt Due	40.3	5.3	.4
Other	46.8	55.1	59.5
Current Liab.	146.6	116.0	113.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	- -	*5.0%*
"Cash Flow"	6.0%	3.0%	*7.0%*
Earnings	9.5%	5.0%	*6.5%*
Dividends	8.0%	7.5%	*9.5%*
Book Value	5.5%	4.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	98.8	113.2	124.4	104.2	440.6
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.7	134.5	113.0	473.9
2020	109.1	121.3	133.7	*115.9*	*480*
2021	*110*	*125*	*145*	*120*	*500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.34	.62	.57	.35	1.88
2018	.29	.44	.62	.37	1.72
2019	.35	.72	.76	.45	2.28
2020	.38	.69	.72	*.46*	*2.25*
2021	*.43*	*.72*	*.75*	*.50*	*2.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.242	.242	.255	.255	.99
2018	.255	.255	.275	.275	1.06
2019	.275	.275	.305	.305	1.16
2020	.305	.305	.335	.335	
2021					

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 260,708 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,420 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 841. BlackRock, Inc. owns 15.9% of out. shares; Vanguard, 11.9%; off. & dir. 1.0%. (4/20 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water probably turned in flattish results in 2020. In the key water segment, higher rates implemented retroactively in 2019 caused a reduction in administrative costs that wasn't replicated last year. A higher effective tax rate and an increase in other operating expenses also contributed to a weaker showing. Nonregulated operations also likely posted a negative comparison due to a decrease in construction activity on military bases. An improved performance from the electric business was not enough to offset these negatives. All told, for the full year, the company's share net likely declined about $0.03, to $2.25.

We look for earnings to get back on track this year, however. This is based on our expectations that the company's expense ratios revert to normal levels. The nonregulated businesses should also do much better, as more military bases in the United States are privatized (more below). In sum, share earnings could well advance a healthy 7%, to $2.40.

A new application for rates should not be ruled upon for some time. As per California procedure, Golden States Water filed a general rate case last year seeking higher tariffs for the years 2022-2024. A final decision by state authorities is not expected until very late this year. The outcome will have a major impact on the utility's profits for this three-year period. We are assuming a reasonable decision in our projections, as relations with the state regulators have generally been constructive.

Nonregulated business should provide an earnings boost. American States' contract service operations ought to make inroads in this market as, more domestic military installations conduct bidding processes to have outside companies provide water to these bases. Returns in this sector are higher than the regulated businesses. The company has already proven itself in this area, as it has won a number of these 50-year contracts.

These shares do not stand out at this time. AWR is ranked to underperform the market averages in the year ahead. Furthermore, long-term prospects are not bright either, as the equity is currently trading near the high end of our 2023-2025 Target Price Range.

James A. Flood *January 8, 2021*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due mid-February.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 9/30/20; $1.1 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	85

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AMERICAN WATER NYSE-AWK

RECENT PRICE 149.65 | P/E RATIO 37.1 (Trailing: 41.0 Median: 22.0) | RELATIVE P/E RATIO 1.74 | DIV'D YLD 1.6% | VALUE LINE

TIMELINESS 2 Lowered 11/13/20
SAFETY 3 New 7/25/08
TECHNICAL 2 Lowered 1/8/21
BETA .85 (1.00 = Market)

High:	23.0	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	98.2	129.9	172.6
Low:	16.2	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0	88.0	92.0

18-Month Target Price Range

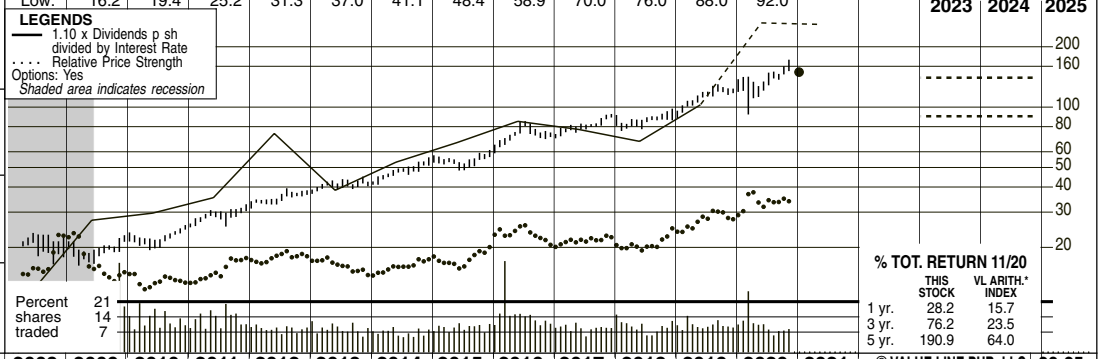
Low-High	Midpoint (% to Mid)
$109-$244	$177 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	140	(-5%)	*Nil*
Low	90	(-40%)	*-9%*

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	333	363	401
to Sell	415	371	337
Hld's(000)	151948	151102	150689



% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	28.2	15.7
3 yr.	76.2	23.5
5 yr.	190.9	64.0

2004	2005	2006E	2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
- -	- -	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	*20.95*	*22.00*	Revenues per sh	*24.75*
- -	- -	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	*7.25*	*7.90*	"Cash Flow" per sh	*8.75*
- -	- -	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	3.43	*3.90*	*4.25*	Earnings per sh A	*4.90*
- -	- -	- -	- -	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	*2.15*	*2.35*	Div'd Decl'd per sh B■	*2.90*
- -	- -	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	*10.50*	*9.20*	Cap'l Spending per sh	*9.00*
- -	- -	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	*36.10*	*37.90*	Book Value per sh D	*42.50*
- -	- -	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	*181.50*	*182.00*	Common Shs Outst'g C	*189.00*
- -	- -	- -	- -	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	*35.3*		Avg Ann'l P/E Ratio	*23.5*
- -	- -	- -	- -	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.79	*1.78*		Relative P/E Ratio	*1.30*
- -	- -	- -	- -	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	*1.6%*		Avg Ann'l Div'd Yield	*2.5%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $10691 mil. **Due in 5 Yrs** $2500 mil.
LT Debt $9580 mil. **LT Interest** $354 mil.
(60% of Cap'l)

Leases, Uncapitalized: Annual rentals $14.0 mill.
Pension Assets12/19 $1747.0 mill
Oblig. $2161.0 mill.
Pfd Stock $4.0 mill. **Pfd Div'd** $.3 mill

Common Stock 181,271,995 shares
as of 10/28/20

MARKET CAP: $27.1 billion (Large Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
2710.7	2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	*3800*	*4000*	Revenues ($mill)	*4675*
267.8	304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0	621.0	*708*	*775*	Net Profit ($mill)	*925*
40.4%	39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	*21.5%*	*21.5%*	Income Tax Rate	*21.0%*
- -	- -	6.2%	5.1%	- -	- -	- -	- -	5.1%	4.0%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
56.8%	55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	*59.5%*	*60.0%*	Long-Term Debt Ratio	*59.0%*
43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	*40.5%*	*40.0%*	Common Equity Ratio	*41.0%*
9561.3	9580.3	9635.5	9940.7	10364	10911	10967	11875	13433	14760	*16150*	*17200*	Total Capital ($mill)	*20000*
11059	11021	11739	12391	12900	13933	14992	16246	17409	18232	*19250*	*20250*	Net Plant ($mill)	*22200*
4.4%	4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	*6.5%*	*5.5%*	Return on Total Cap'l	*6.0%*
6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	*11.0%*	*11.0%*	Return on Shr. Equity	*11.5%*
6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	*11.0%*	*11.5%*	Return on Com Equity	*11.5%*
2.8%	3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	*5.0%*	*4.5%*	Retained to Com Eq	*4.5%*
56%	52%	57%	40%	50%	50%	56%	68%	56%	57%	*55%*	*55%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	158	91	599
Accts Receivable	301	294	358
Other	322	900	1010
Current Assets	781	1285	1967
Accts Payable	175	203	162
Debt Due	1035	814	1111
Other	884	1028	987
Current Liab.	2094	2045	2260

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	3.0%	*4.5%*
"Cash Flow"	13.0%	6.0%	*6.5%*
Earnings	45.5%	6.5%	*8.5%*
Dividends	16.0%	10.5%	*8.5%*
Book Value	2.5%	4.0%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	756	844	936	821	3357
2018	761	853	976	850	3440
2019	813	882	1013	902	3610
2020	844	931	1079	*946*	*3800*
2021	*885*	*970*	*1145*	*1000*	*4000*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.52	.73	1.12	.01	2.38
2018	.59	.91	1.03	.62	3.15
2019	.62	.94	1.33	.54	3.43
2020	.68	.97	1.46	*.79*	*3.90*
2021	*.73*	*1.05*	*1.60*	*.87*	*4.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.375	.415	.415	.415	1.62
2018	.415	.455	.455	.455	1.78
2019	.455	.50	.50	.50	1.96
2020	.50	.55	.55	.55	
2021					

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to approximately 15 million people in 46 states. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86% of 2019 revenues. New Jersey is its largest market accounting for 24.6% of regulated revenues; Pennsylvania, 22.3%; Missouri, 10.5%. Has 6,800 employees. The Vanguard Grp, owns 12.4% of outstanding shares; BlackRock, Inc., 8.7%; officers & directors, less than 1.0%. (3/20 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works probably completed another strong year. In 2020, we think the water utility posted solid earnings growth for the third-consecutive year. Indeed, we estimate that its share net rose nearly 14% to $3.90. Much of this can be attributed to the demand for water by residential customers not being impacted much by the state of the economy.

The positive profit trend should continue this year. Through the bottom-line gain will likely not match last year's rate, American Water should still see a solid 9% increase in earnings per share.

Acquisitions should remain a key part of the growth strategy. The utility has been purchasing many smaller municipally run water districts for years. Many of these entities are extremely inefficient and lack the financial wherewithal to replace their aging pipelines. American Water has a proven track record of absorbing new assets and streamlining costs, all while improving service. It's likely because of these two factors that regulators have treated the company so constructively.

The construction budget is enormous, but manageable. Management targeted $1.9 billion to refurbish and expand its existing water infrastructure in 2019. What's more, the cost of continuing the program should average about $2 billion annually over the next decade. Internally generated funds should cover a good deal of the funds needed, but the company has been issuing bonds to finance the difference. Indeed, its long-term debt-to-total capital ratio has reached the 60% mark. New equity issuance has been very restrained, and shares outstanding have increased only around 4% over the past 11 years. As the equity has performed well over that time span, management may want to consider selling new stock as a way of improving its finances.

The dividend ought to be hiked later this year. At the next meeting in February, we expect the quarterly payout to be raised 9.3%, or $0.05 per share, to $0.60. Moreover, this healthy rate of growth is probably sustainable through mid-decade.

These shares remain timely. However, like most in the water utility group, total return prospects through 2023-2025 are well below the *Value Line* median.

James A. Flood *January 8, 2021*

(A) Diluted earnings. Excludes nonrecur. losses: '08, $4.62; '09, $2.63; '11, $0.07. Disc. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due mid-February
(B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available.
(C) In millions. (D) Includes intangibles. On 9/30/20: $1.562 billion, $8.62/share.
(E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	85

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CALIFORNIA WATER NYSE-CWT

RECENT PRICE **54.21** | P/E RATIO **19.1** (Trailing: 29.0 Median: 23.0) | RELATIVE P/E RATIO **0.90** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 2 Raised 11/20/20
SAFETY 3 Lowered 7/27/07
TECHNICAL 4 Lowered 1/8/21
BETA .65 (1.00 = Market)

High:	24.1	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	57.4
Low:	16.7	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6	39.7

Target Price Range 2023 | 2024 | 2025

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 6/11
Options: Yes
Shaded area indicates recession

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$42-$79	$61 (10%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+10%)	5%
Low	40	(-25%)	-5%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	104	109	101
to Sell	118	107	106
Hld's(000)	35792	35580	36492

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-2.4	15.7
3 yr.	13.8	23.5
5 yr.	140.5	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	14.72	*16.00*	*16.00*	Revenues per sh	*16.05*
1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	3.14	*3.60*	*3.45*	"Cash Flow" per sh	*3.65*
.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	*2.00*	*1.90*	Earnings per sh A	*2.15*
.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	*.85*	*.89*	Div'd Decl'd per sh B ■	*1.05*
1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	5.64	*4.85*	*4.75*	Cap'l Spending per sh	*4.25*
7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	15.19	16.07	*18.00*	*18.15*	Book Value per sh C	*19.35*
36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	*50.00*	*51.00*	Common Shs Outst'g D	*53.00*
20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	39.3	*24.5*		Avg Ann'l P/E Ratio	*23.0*
1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64	2.13	*1.24*		Relative P/E Ratio	*1.30*
3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%	1.5%	*1.7%*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $1182.1 mill. **Due in 5 Yrs** $357.0 mill.
LT Debt $785.1 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 11.2x) (50% of Cap'l)

Pension Assets-12/19 $573.6 mill.
Oblig. $812.0 mill.

Pfd Stock None

Common Stock 49,840,000 shs.

MARKET CAP: $2.7 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
460.4	501.8	560.0	584.1	597.5	588.4	609.4	666.9	698.2	714.6	*800*	*815*	Revenues ($mill) E	*850*
37.7	36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	63.1	*100*	*97.0*	Net Profit ($mill)	*115*
39.5%	40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
4.2%	7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
52.4%	51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	*45.5%*	*44.0%*	Long-Term Debt Ratio	*39.0%*
47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	*54.5%*	*56.0%*	Common Equity Ratio	*61.0%*
914.7	931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	*1650*	*1650*	Total Capital ($mill)	*1675*
1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	*2550*	*2575*	Net Plant ($mill)	*2700*
5.5%	5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	*7.0%*	*6.5%*	Return on Total Cap'l	*7.5%*
8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	*11.0%*	*10.5%*	Return on Shr. Equity	*11.0%*
8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	*11.0%*	*10.5%*	Return on Com Equity	*11.0%*
3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	*6.5%*	*5.5%*	Retained to Com Eq	*5.5%*
66%	71%	62%	56%	55%	71%	68%	51%	55%	60%	*43%*	*47%*	All Div'ds to Net Prof	*49%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	47.2	42.7	113.3
Other	141.5	142.0	192.5
Current Assets	188.7	184.7	305.8
Accts Payable	95.6	108.5	127.2
Debt Due	170.0	197.0	397.0
Other	55.6	53.2	79.6
Current Liab.	321.2	358.7	603.8

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 489,600 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '19: residential, 67%; business, 20%; industrial, 5%; public authorities, 5%; other 3%. Off. and dir. own 1% of common stock (4/20 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	4.0%	2.5%	*2.0%*
"Cash Flow"	5.5%	5.5%	*3.0%*
Earnings	4.5%	4.5%	*8.0%*
Dividends	2.5%	3.5%	*5.5%*
Book Value	4.5%	4.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.)E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	122.1	171.1	211.7	162.0	666.9
2018	134.6	174.9	221.3	167.4	698.2
2019	126.1	179.0	232.6	176.9	714.6
2020	125.6	175.5	304.1	*194.8*	*800*
2021	*155*	*205*	*255*	*200*	*815*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.02	.39	.70	.29	1.40
2018	d.02	.31	.75	.32	1.36
2019	d.16	.35	.88	.24	1.31
2020	d.42	.11	1.94	*.37*	*2.00*
2021	*.08*	*.45*	*.95*	*.42*	*1.90*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.18	.18	.18	.18	.72
2018	.1875	.1875	.1875	.1875	.75
2019	.1975	.1975	.1975	.1975	.79
2020	.2125	.2125	.2125	.2125	
2021					

California Water Service Group's 2018 general rate case has officially been approved. The California Public Utilities Commission (CPUC) has fully adopted the proposal. Specifically, subsequent to CPUC giving California Water the nod, the company is now authorized to invest more than $825 million through 2021 for various infrastructure upgrades, such as improvements to its water distribution system, treatment facilities, and piping systems. Because of this development, California Water's third-quarter financial results reflect the application and recording of certain assets and revenues recovered under the new rate decision. Moreover, the company has been approved to boost revenues by increasing customer rates beginning this year through 2022.

All things considered, our financial projections are being raised across the board. For 2020, the company likely generated share profits of $2.00 (up from our previous call of $0.85) from revenues of $800 million (up from $730 million). Modest top-line growth is probably in the cards this year, given the favorable rate case decision mentioned above, coupled with the likelihood for sustainable water consumption, though the bottom line may contract by a dime, largely due to the tough year-over-year comparison.

California Water's subsidiary, Hawaii Water, announced it will acquire wastewater system assets from Keauhou Community Services. The deal, which would add roughly 1,500 customers to Hawaii Water's roster, is pending approval by local regulators. Financial details were not disclosed. Finally, the asset purchase comes off the heels of its recent acquisition of Rainier Water Company in Washington State. On top of expanding populations, we think bolt-on asset agreements will be par for the course.

Short-term investors are best suited here. The issue has been upgraded one notch for Timeliness, to 2 (Above Average). Notably, the stock price has risen more than 15% since our October review. That said, we think it would be prudent for patient accounts to remain on the sidelines, for now, as total return potential out to 2023-2025 does not stand out at recent levels.

Nicholas P. Patrikis *January 8, 2021*

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4¢. Next earnings report due early Feb.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '19 : $24.9 mill., $0.51/sh.
(D) In millions, adjusted for split.
(E) Excludes non-regulated revenues

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	65

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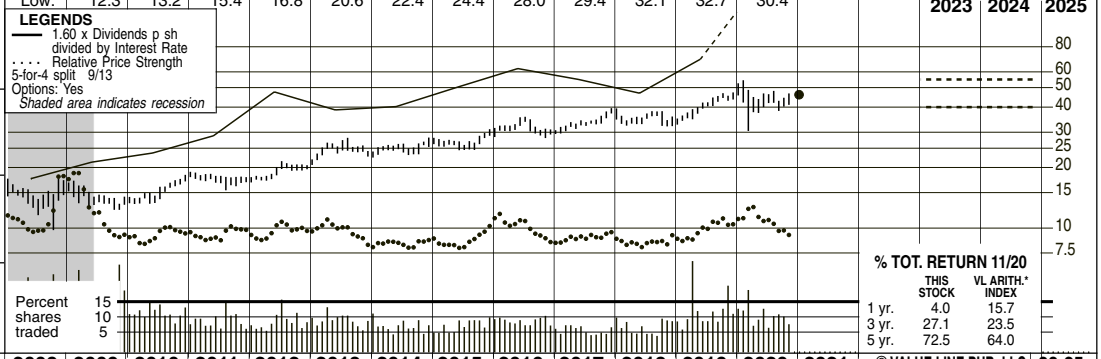
ESSENTIAL UTIL. NYSE-WTRG

RECENT PRICE **46.08** | P/E RATIO **41.5** (Trailing: 46.5 Median: 23.0) | RELATIVE P/E RATIO **1.95** | DIV'D YLD **2.3%** | VALUE LINE

TIMELINESS 3 Lowered 1/8/21
SAFETY 3 Lowered 1/8/21
TECHNICAL 2 Raised 1/1/21
BETA .95 (1.00 = Market)

High:	17.2	18.4	19.0	21.5	28.1	28.2	31.1	35.8	39.6	39.4	47.3	54.5
Low:	12.3	13.2	15.4	16.8	20.6	22.4	24.4	28.0	29.4	32.1	32.7	30.4

LEGENDS
— 1.60 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
5-for-4 split 9/13
Options: Yes
Shaded area indicates recession



Target Price Range
2023 | 2024 | 2025

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$35-$93	$64 (40%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+20%)	7%
Low	40	(-15%)	Nil

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	252	250	237
to Sell	292	235	227
Hld's(000)	161407	161504	167838

Percent shares traded 15 10 5

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.0	15.7
3 yr.	27.1	23.5
5 yr.	72.5	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.62	4.56	4.71	4.03	*6.15*	*8.15*	Revenues per sh	*8.45*
.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.07	2.12	1.90	1.73	*2.05*	*2.30*	"Cash Flow" per sh	*2.65*
.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.08	1.04	*1.05*	*1.20*	Earnings per sh A	*1.75*
.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	*.97*	*1.04*	Div'd Decl'd per sh B■	*1.30*
1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.69	2.78	2.49	*2.75*	*4.00*	Cap'l Spending per sh	*4.75*
4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	11.02	11.28	17.58	*18.55*	*18.75*	Book Value per sh	*20.00*
158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.09	220.76	*251.25*	*252.00*	Common Shs Outst'g C	*260.00*
25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	24.7	32.6	39.1	*42.2*		Avg Ann'l P/E Ratio	*27.0*
1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.25	1.24	1.76	2.12	*2.13*		Relative P/E Ratio	*1.50*
2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%	2.4%	2.2%	*2.2%*		Avg Ann'l Div'd Yield	*2.7%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $5444.0 mill. **Due in 5 Yrs** $496.0 mill.
LT Debt $5191.0 mill. **LT Interest** $196.0 mill.
(53% of Cap'l)

Pension Assets-12/19 $266.4 mill.
Oblig. $310.5 mill.

Pfd Stock None
Common Stock 245,271,727 shares
as of 10/23/20

MARKET CAP: $11.3 billion (Large Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
726.1	712.0	757.8	768.6	779.9	814.2	819.9	809.5	838.1	889.7	*1550*	*2050*	Revenues ($mill)	*2200*
124.0	144.8	153.1	205.0	213.9	201.8	234.2	239.7	192.0	224.5	*265*	*300*	Net Profit ($mill)	*455*
39.2%	32.9%	39.0%	10.0%	10.5%	6.9%	8.2%	6.6%	6.6%	6.6%	*1.5%*	*3.5%*	Income Tax Rate	*8.0%*
--	--	--	1.1%	2.4%	3.1%	3.8%	6.3%	6.8%	7.2%	*4.5%*	*7.0%*	AFUDC % to Net Profit	*7.0%*
56.6%	52.7%	52.7%	48.9%	48.5%	50.3%	48.4%	50.6%	54.4%	43.1%	*53.0%*	*57.0%*	Long-Term Debt Ratio	*40.5%*
43.4%	47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	49.4%	45.6%	56.9%	*47.0%*	*43.0%*	Common Equity Ratio	*59.5%*
2706.2	2646.8	2929.7	3003.6	3216.0	3469.5	3587.7	3965.4	4407.8	6824.2	*9880*	*10370*	Total Capital ($mill)	*12800*
3469.3	3612.9	3936.2	4167.3	4402.0	4688.9	5001.6	5399.9	5930.3	6345.8	*9525*	*10160*	Net Plant ($mill)	*12000*
5.9%	6.9%	6.6%	8.0%	7.8%	6.9%	7.6%	7.1%	5.5%	4.2%	*3.5%*	*4.0%*	Return on Total Cap'l	*4.5%*
10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	*5.5%*	*6.5%*	Return on Shr. Equity	*9.0%*
10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	*5.5%*	*6.5%*	Return on Com Equity	*9.0%*
3.7%	4.6%	4.3%	6.7%	6.1%	4.7%	5.6%	5.1%	2.1%	.9%	*NMF*	*1.0%*	Retained to Com Eq	*2.5%*
65%	60%	61%	50%	52%	60%	56%	59%	79%	84%	*92%*	*87%*	All Div'ds to Net Prof	*74%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	3.6	1868.9	8.5
Receivables	101.2	67.1	126.8
Inventory (AvgCst)	15.8	18.4	66.6
Other	26.6	58.3	109.3
Current Assets	147.2	2012.7	311.2
Accts Payable	77.3	74.9	158.2
Debt Due	160.0	130.8	253.0
Other	161.7	113.1	255.8
Current Liab.	399.0	318.8	667.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	1.5%	.5%	*11.5%*
"Cash Flow"	5.0%	2.0%	*5.5%*
Earnings	7.0%	1.5%	*7.0%*
Dividends	7.5%	8.0%	*7.5%*
Book Value	8.0%	9.0%	*7.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	187.8	203.4	215.0	203.3	809.5
2018	194.3	211.9	226.2	205.7	838.1
2019	201.1	218.9	243.6	226.1	889.7
2020	255.6	384.5	348.6	*561.3*	*1550*
2021	*550*	*450*	*450*	*600*	*2050*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.28	.34	.43	.30	1.35
2018	.29	.37	.44	d.02	1.08
2019	.09	.25	.38	.28	1.04
2020	.20	.29	.22	*.34*	*1.05*
2021	*.22*	*.33*	*.33*	*.32*	*1.20*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1913	.1913	.2047	.2047	.79
2018	.2047	.2047	.219	.219	.85
2019	.219	.219	.2343	.2343	.91
2020	.2343	.2343	.2507	.2507	
2021					

BUSINESS: Essential Utilities, Inc. became the new name for Aqua America on Feb. 3, 2020, to reflect the acquisition of Peoples, a natural gas utility, which occurred in 3/20. In 2019, Aqua Amer. provided water and wastewater services to about three million people in PA, OH, TX, IL, NC, NJ, IN, and VA. Employed 1,583. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues 2019: residential, 58%; commercial, 16%; industrial, wastewater & other, 26%. Off. & dir. own less than 1% of the common stock; BlackRock, 10.5%; Vanguard, 10.4%; (4/20 proxy). Canadian Pension Plan about 8.8%. Pres. & CEO: Christopher Franklin. Inc.: PA Addr.: 762 West Lancaster Ave., Bryn Mawr, PA 19010. Tel.: 610-525-1400. Int.: www.essential.co.

Essential Utilities' prospects should be better defined going forward. The basic makeup of the company was greatly altered last March when the water company (formerly know as Aqua America), paid $4.3 billion, and assumed over $1 billion in debt, to acquire Peoples, a large natural gas concern. Due to the transaction, Essential had to absorb a number of one-time charges related to the acquisition. Following this year's first quarter, year-over-year comparisons will become more meaningful. All told, eliminating some of the costs incurred in 2020, we estimate that Essential's share net can climb 14%, to $1.20, in 2021. *(Please note: Management was scheduled to hold a conference call providing guidance for 2021 shortly after this report was made public.)*

Dividend growth prospects are good. Following the merger, the board raised the quarterly payout 7%. We expect this rate to be maintained over the next three- to five-year period.

The company has an ambitious capital spending program. On the water side of the business, like almost all of its peers, Essential is in the midst of spending heavily to replace aging pipelines. It's also making outlays to modernize the natural gas infrastructure. Overall, the construction budget should total close to $3.0 billion over the 2020-2022 period.

Finances have weakened. Despite the large acquisition and assumption of debt, the balance sheet is in decent shape with long-term debt accounting for slightly over half of total capital. Nevertheless, we are lowering its Financial Strength two notches to B+, which is an average rating.

Regulation will continue to have a huge impact on operations. In the water utility sector, state authorities treat companies under their domain relatively constructively. In the gas business, the same cannot be said, as regulators and gas utilities seem to clash more often regarding rate hikes and allowed returns.

Shares of Essential have done well since our October report. They are ranked to only perform in line with the market averages in the coming year, though. Moreover, as is the case with most members of this group, CWCO's total return prospects to 2023-2025 are subpar.

James A. Flood *January 8, 2021*

(A) Diluted egs. Excl. nonrec. gains: '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. Quarterly EPS do not add in '19 due to a large change in the number of shares outstanding in the Dec. period. Next earnings report mid-February. **(B)** Dividends historically paid in early March, June, Sept., & Dec. ■ Div'd. reinvestment plan available (5% discount). **(C)** In millions, adjusted for stock splits. **(D)** Includes intangibles: 9/30/20, $2,342.5 bill./$9.55 a share.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	60

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MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 72.38 | P/E RATIO 32.8 (Trailing: 33.4 Median: 21.0) | RELATIVE P/E RATIO 1.54 | DIV'D YLD 1.5% | VALUE LINE

TIMELINESS 1 Raised 11/13/20
SAFETY 2 New 10/21/11
TECHNICAL 2 Raised 1/1/21
BETA .75 (1.00 = Market)

High:	17.9	19.3	19.4	19.6	22.5	23.7	28.0	44.5	46.7	60.3	67.7	76.1
Low:	11.6	14.7	16.5	17.5	18.6	19.1	21.2	25.0	32.2	34.0	51.0	48.8

18-Month Target Price Range

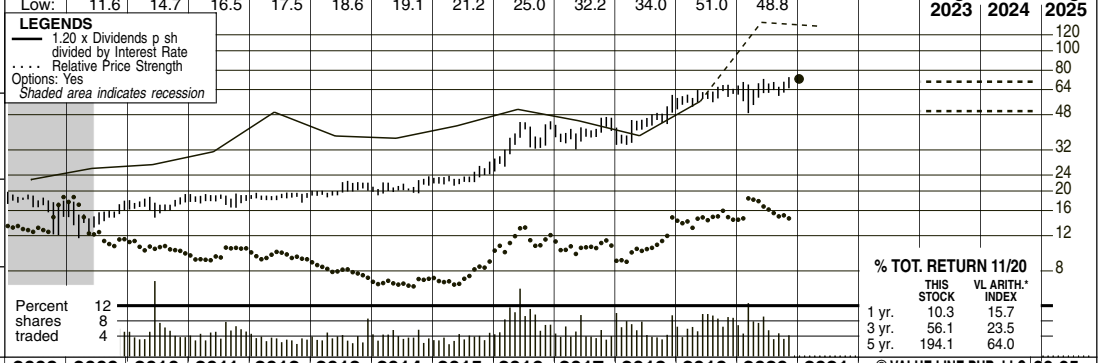
Low-High	Midpoint (% to Mid)
$57-$102	$80 (10%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	70	(-5%)	1%
Low	50	(-30%)	-6%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	55	68	52
to Sell	70	55	69
Hld's(000)	10280	10359	10357



% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	10.3	15.7
3 yr.	56.1	23.5
5 yr.	194.1	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	*8.05*	*8.45*	Revenues per sh	*9.15*
1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	2.90	*3.05*	*3.15*	"Cash Flow" per sh	*3.65*
.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	*2.20*	*2.25*	Earnings per sh A	*2.65*
.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	*1.04*	*1.10*	Div'd Decl'd per sh B■	*1.25*
2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	5.11	*3.95*	*4.50*	Cap'l Spending per sh	*5.00*
8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	18.57	*16.15*	*16.50*	Book Value per sh	*17.50*
11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	17.43	*17.65*	*17.75*	Common Shs Outst'g C	*18.00*
26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	29.7	*29.8*		Avg Ann'l P/E Ratio	*23.0*
1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.61	*1.50*		Relative P/E Ratio	*1.30*
3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%	1.6%	*1.6%*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $278.2 mill. **Due in 5 Yrs** $43.7 mill.
LT Debt $234.5 mill. **LT Interest** $7.2 mill.
(Total interest coverage: 8.5x)
(42% of Cap'l)

Pension Assets-12/19 $80.4 mill.
Oblig. $100.9 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.1 mill.

Common Stock 17,469,410 shs.
as of 10/29/20

MARKET CAP: $1.3 billion (Mid-Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
102.7	102.1	110.4	114.8	117.1	126.0	132.9	130.8	138.1	134.6	*142*	*150*	Revenues ($mill)	*165*
14.3	13.4	14.4	16.6	18.4	20.0	22.7	22.8	32.5	33.9	*34.0*	*40.0*	Net Profit ($mill)	*48.0*
32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	2.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*2.5%*
43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.8%	41.5%	*44.5%*	*42.5%*	Long-Term Debt Ratio	*38.5%*
55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	61.6%	58.2%	*55.5%*	*57.0%*	Common Equity Ratio	*61.0%*
310.5	312.5	316.5	321.4	335.8	345.4	355.4	370.7	404.1	556.7	*515*	*515*	Total Capital ($mill)	*520*
405.9	422.2	435.2	446.5	465.4	481.9	517.8	557.2	618.5	705.7	*720*	*735*	Net Plant ($mill)	*775*
5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	*8.0%*	*8.5%*	Return on Total Cap'l	*9.5%*
8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	*13.5%*	*13.5%*	Return on Shr. Equity	*15.0%*
8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	*13.5%*	*13.5%*	Return on Com Equity	*15.0%*
2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.8%	7.0%	5.4%	*7.0%*	*7.0%*	Retained to Com Eq	*8.0%*
75%	87%	83%	73%	67%	63%	58%	62%	46%	48%	*47%*	*49%*	All Div'ds to Net Prof	*47%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	3.7	2.2	5.3
Other	27.1	26.9	32.6
Current Assets	30.8	29.1	37.9
Accts Payable	19.3	23.3	24.9
Debt Due	55.8	27.2	43.7
Other	19.3	14.5	16.8
Current Liab.	94.4	65.0	85.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	2.0%	2.5%	*2.0%*
"Cash Flow"	6.0%	9.5%	*5.5%*
Earnings	8.0%	12.0%	*7.0%*
Dividends	2.5%	4.0%	*5.5%*
Book Value	4.5%	6.0%	*1.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	30.1	33.0	36.2	31.5	130.8
2018	31.2	34.9	38.7	33.3	138.1
2019	30.7	33.4	37.8	32.7	134.6
2020	31.8	35.3	39.9	*35.0*	*142*
2021	*33.0*	*37.0*	*44.0*	*36.0*	*150*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.27	.33	.46	.32	1.38
2018	.27	.52	.74	.43	1.96
2019	.39	.49	.66	.46	2.01
2020	.44	.55	.72	*.49*	*2.20*
2021	*.45*	*.55*	*.73*	*.52*	*2.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375	.22375	.24	.91
2019	.24	.24	.24	.2562	.98
2020	.2562	.2562	.2562	.2725	
2021					

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2019, the Middlesex System accounted for 60% of operating revenues. At 12/31/19, the company had 352 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.1% of the com. stock; BlackRock Inst. Trust Co., 7.7% (4/20 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tel.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water reported better-than-expected bottom-line results in the third quarter. Notably, the company earned $0.72 a share, or 9% above the previous-year tally. The strong performance stemmed largely from lower taxes due to regulatory accounting changes, as well as higher operating income. Meanwhile, despite slightly missing our $42 million mark, revenues of nearly $40 million (up 6% year over year) were aided by increased residential and wholesale water consumption, along with a wider customer base in its Delaware system.

All in all, we now expect Middlesex Water to close out 2020 with revenues of $142 million (down from our previous call of $145 million) and share net of $2.20 (up from $2.15). For this year, modest top- and bottom-line growth is probably in the cards. Water consumption should stay elevated as personal hygiene remains a top priority. Assuming the economy gets back on track in the near term, we expect the reopening of businesses and resumed construction and industrial projects to boost wholesale consumption.

Infrastructure spending is apt to be robust through mid-decade. Specifically, Middlesex's Water For Tomorrow initiative has earmarked investment funds of $300 million that will be used to improve watermains, pipe systems, wastewater treatment facilities, and other vital infrastructure upgrades. To supplement its spending, we suspect management can pass along some of these costs to consumers via periodic regulator-approved rate hikes.

The stock etched a fresh high-water mark during the December interim. Based on our Timeliness Ranking System, Middlesex shares are slated as a top selection (1) for relative year-ahead price performance and, thus, ought to appeal to momentum accounts. On the other hand, we continue to recommend that subscribers with a long-term bent remain on the sidelines, as most of the growth we envision over the coming three to five years appears to already be factored into the current quotation. Moreover, even after recently increasing the quarterly payout by 6%, the dividend yield is subpar.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Next earnings report due early February.
(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.
(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	65
Earnings Predictability	80

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SJW GROUP NYSE-SJW

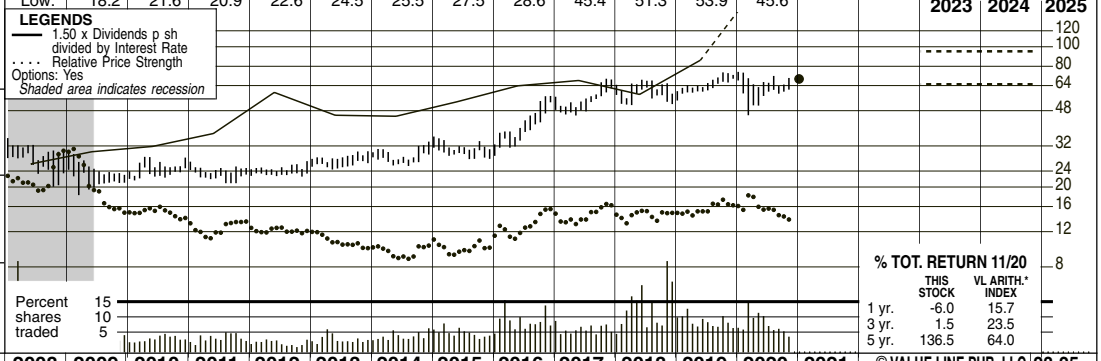
RECENT PRICE **69.04** | P/E RATIO **30.3** (Trailing: 34.2 Median: 21.0) | RELATIVE P/E RATIO **1.42** | DIV'D YLD **1.9%** | VALUE LINE

TIMELINESS — Suspended 5/4/18
SAFETY 3 New 4/22/11
TECHNICAL — Suspended 5/4/18
BETA .85 (1.00 = Market)

High:	30.4	28.2	26.8	26.9	30.1	33.7	35.7	56.9	69.3	68.4	74.5	75.0
Low:	18.2	21.6	20.9	22.6	24.5	25.5	27.5	28.6	45.4	51.3	53.9	45.6

Target Price Range 2023 | 2024 | 2025

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$51-$120	$86 (25%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+40%)	*10%*
Low	65	(-5%)	*1%*

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	72	78	62
to Sell	95	75	77
Hld's(000)	19448	19939	19827

Percent shares traded 15 10 5

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-6.0	15.7
3 yr.	1.5	23.5
5 yr.	136.5	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	14.78	*19.30*	*20.00*	Revenues per sh	*21.65*
1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.67	*3.85*	*4.25*	"Cash Flow" per sh	*5.30*
.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	1.35	*2.10*	*2.55*	Earnings per sh A	*3.65*
.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	*1.28*	*1.36*	Div'd Decl'd per sh B■	*1.66*
2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	*5.25*	*5.75*	Cap'l Spending per sh	*6.50*
10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	*32.25*	*35.60*	Book Value per sh	*39.15*
18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	*29.00*	*29.50*	Common Shs Outst'g C	*30.00*
19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	47.8	*30.6*		Avg Ann'l P/E Ratio	*22.0*
1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	2.58	*1.54*		Relative P/E Ratio	*1.20*
3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	*2.0%*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $1379.5 mill. **Due in 5 Yrs** $22.4 mill.
LT Debt $1307.6 mill. **LT Interest** $50.0 mill.
(LT Interest Coverage: 4.9x)
(60% of Cap'l)

Pension Assets-12/19 $243.5 mill.
Oblig. $338.2 mill.
Pfd Stock None.
Common Stock 28,552,177 shs.

MARKET CAP: $2.0 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
215.6	239.0	261.5	276.9	319.7	305.1	339.7	389.2	397.7	420.5	*560*	*590*	Revenues ($mill)	*650*
15.8	20.9	22.3	23.5	51.8	37.9	52.8	59.2	38.8	38.7	*61.0*	*75.0*	Net Profit ($mill)	*110*
38.8%	41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	36.7%	20.6%	25.3%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
- -	- -	- -	- -	- -	- -	- -	- -	2.0%	1.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
53.7%	56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	32.7%	59.1%	*58.0%*	*53.5%*	Long-Term Debt Ratio	*39.0%*
46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	*42.0%*	*46.5%*	Common Equity Ratio	*61.0%*
550.7	607.9	610.2	656.2	744.5	764.6	855.0	894.3	1320.7	2173.6	*2235*	*2250*	Total Capital ($mill)	*1925*
785.5	756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	1328.8	2206.5	*2300*	*2450*	Net Plant ($mill)	*2775*
4.3%	4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	2.5%	*3.5%*	*4.0%*	Return on Total Cap'l	*6.5%*
6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	*6.5%*	*7.0%*	Return on Shr. Equity	*9.5%*
6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	*6.5%*	*7.0%*	Return on Com Equity	*9.5%*
1.2%	3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	.5%	*2.5%*	*3.5%*	Retained to Com Eq	*5.0%*
80%	61%	59%	62%	29%	42%	31%	36%	60%	88%	*61%*	*53%*	All Div'ds to Net Prof	*45%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	420.7	17.9	20.2
Accts Receivable	19.2	36.3	51.4
Other	62.8	67.8	83.3
Current Assets	502.7	122.0	154.9
Accts Payable	24.9	34.9	33.8
Debt Due	- -	22.3	71.9
Other	139.1	177.4	199.7
Current Liab.	164.0	234.6	305.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	2.0%	*5.5%*
"Cash Flow"	6.0%	3.5%	*4.5%*
Earnings	7.5%	4.5%	*10.5%*
Dividends	6.0%	9.0%	*7.0%*
Book Value	7.5%	12.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	69.0	102.1	124.6	93.5	389.2
2018	75.0	99.1	124.9	98.7	397.7
2019	77.7	103.0	114.0	126.0	420.5
2020	115.8	147.2	165.9	*131.1*	*560*
2021	*120*	*150*	*175*	*145*	*590*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.18	.90	.94	.84	2.86
2018	.06	.62	.76	.38	1.82
2019	.21	.47	.33	.34	1.35
2020	.08	.69	.91	*.42*	*2.10*
2021	*.20*	*.75*	*.95*	*.65*	*2.55*

Cal-endar	QUARTERLY DIVIDENDS PAID BD■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28	.28	.28	1.12
2019	.30	.30	.30	.30	1.20
2020	.32	.32	.32	.32	
2021					

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with a total population of 450,000 people. Has 361 employees. Officers and directors own 8.3% of outstanding shares (3/20 proxy). Chairman & CEO: Richard Roth. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

SJW Group reported solid third-quarter financial results. The regulated water utility posted revenues of $166 million, a jump of 46% year over year, and earnings of $0.91 per share, nearly triple the year-earlier tally in the September interim. Underpinning the impressive advance was approximately $37 million in new revenues associated with the CTWS merger, roughly $5 million linked to water rate increases and higher customer usage, and about $10 million in reserve revenues recognized from previous years. Moreover, COVID-19-related disruptions that hampered results in previous periods have largely subsided, and merger-related expenses have notably waned.

Our 2020 share-profit forecast sits a nickel above management's upper guidance range. Our slightly-more-optimistic call for earnings of $2.10 per share stems from the recent outperformance, as well as improving post-merger operating metrics. Meanwhile, we are adding $5 million to our top-line estimate, to $560 million. For 2021, we currently look for revenues and earnings to expand 5% and 21%, respectively.

SJW Group is well positioned for long-term growth, in our view. For one, its recently bolstered geographic footprint now spans four states, which augurs well for an expanding customer base and increased operational synergies. Too, the top line ought to get a boost from the implementation of periodic rate hikes. Meanwhile, we think aggressive capital investment to replace and upgrade aging infrastructure, such as watermains, pipe systems, and treatment facilities is likely on tap. Lastly, an improving economic backdrop and a renewed focus on personal hygiene from the general public should support higher consumer water consumption in the coming years.

Strong business prospects aside, we are hesitant to recommend the stock at recent levels. Unranked SJW shares have risen about 10% in value since our October review, and are currently trading inside our 3- to 5-year Target Price Range. The dividend yield is merely average, as well. Thus, we suggest interested subscribers remain on the sidelines until a better entry point is available.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Excludes nonrecurring losses: '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early Feb. Quarterly egs. may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions.
(D) Paid special dividend of $0.17 per share on 11/17.
(E) Suspended due to recent CTWS merger.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	70
Earnings Predictability	45

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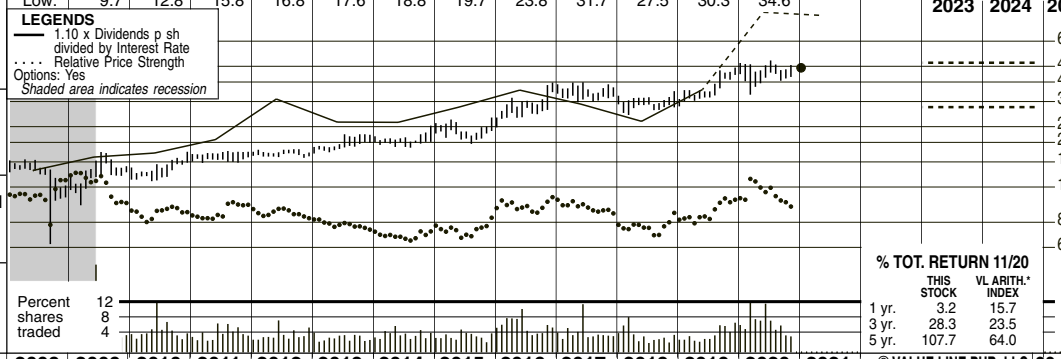
YORK WATER NDQ-YORW

RECENT PRICE **47.16** | P/E RATIO **36.3** (Trailing: 37.7 Median: 26.0) | RELATIVE P/E RATIO **1.70** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 2 Raised 5/29/20
SAFETY 3 Lowered 7/17/15
TECHNICAL 2 Raised 1/1/21
BETA .80 (1.00 = Market)

High:	18.0	18.0	18.1	18.5	22.0	24.3	26.7	39.8	39.9	36.1	47.3	51.3
Low:	9.7	12.8	15.8	16.8	17.6	18.8	19.7	23.8	31.7	27.5	30.3	34.6

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



Target Price Range
2023 | 2024 | 2025

18-Month Target Price Range
Low-High: $37-$78 | Midpoint (% to Mid): $58 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+5%)	3%
Low	30	(-35%)	-8%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	61	59	46
to Sell	52	48	53
Hld's(000)	5387	5479	5302

Percent shares traded 12 8 4

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	3.2	15.7
3 yr.	28.3	23.5
5 yr.	107.7	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.74	3.96	*4.10*	*4.20*	Revenues per sh	*5.10*
.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.58	1.70	*1.90*	*1.95*	"Cash Flow" per sh	*2.40*
.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.04	1.11	*1.30*	*1.35*	Earnings per sh A	*1.60*
.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.67	.70	*.73*	*.78*	Div'd Decl'd per sh B	*.95*
2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	1.95	.16	*.85*	*1.35*	Cap'l Spending per sh	*1.85*
4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	9.75	10.31	*11.15*	*11.60*	Book Value per sh	*12.50*
10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	12.94	13.02	*13.00*	*12.95*	Common Shs Outst'g C	*12.80*
25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	30.3	33.8	*34.9*		Avg Ann'l P/E Ratio	*25.0*
1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.74	1.64	1.83	*1.76*		Relative P/E Ratio	*1.40*
3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%	2.1%	1.9%	*1.6%*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $116.8 mill. **Due in 5 Yrs** $42.5 mill.
LT Debt $116.8 mill. **LT Interest** $5.5 mill.
(45% of Cap'l)

Pension Assets12/19 $49.3 mill.
Oblig. $47.3 mill.

Pfd Stock None

Common Stock 13,049,237 shs.

MARKET CAP: $625 million (Small Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
39.0	40.6	41.4	42.4	45.9	47.1	47.6	48.6	48.4	51.6	*53.5*	*54.5*	Revenues ($mill)	*65.0*
8.9	9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	14.4	*17.0*	*17.5*	Net Profit ($mill)	*20.5*
38.5%	35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	15.7%	13.5%	*18.5%*	*21.0%*	Income Tax Rate	*21.0%*
1.2%	1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	1.7%	2.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
48.3%	47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	42.5%	41.3%	*44.0%*	*40.0%*	Long-Term Debt Ratio	*36.0%*
51.7%	52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.5%	58.7%	*56.0%*	*60.0%*	Common Equity Ratio	*64.0%*
176.4	180.2	184.8	188.4	189.4	196.3	198.7	209.5	219.5	228.7	*260*	*250*	Total Capital ($mill)	*250*
228.4	233.0	240.3	244.2	253.2	261.4	270.9	288.8	299.2	313.2	*315*	*320*	Net Plant ($mill)	*335*
6.5%	6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	7.3%	7.4%	*7.5%*	*8.0%*	Return on Total Cap'l	*9.0%*
9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	*11.5%*	*11.5%*	Return on Shr. Equity	*13.0%*
9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	*11.5%*	*11.5%*	Return on Com Equity	*13.0%*
2.7%	2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	3.8%	4.0%	*5.0%*	*5.0%*	Retained to Com Eq	*5.0%*
72%	73%	74%	74%	64%	62%	67%	63%	64%	62%	*56%*	*58%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	- -	- -	10.9
Accounts Receivable	4.8	4.4	5.2
Inventory (Avg. Cost)	.9	1.0	1.2
Other	3.3	4.0	4.5
Current Assets	9.0	9.4	21.8
Accts Payable	3.0	3.4	6.8
Debt Due	1.0	6.5	- -
Other	6.8	5.3	5.1
Current Liab.	10.8	15.2	11.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	2.5%	*5.0%*
"Cash Flow"	6.0%	5.5%	*7.0%*
Earnings	6.0%	6.0%	*7.0%*
Dividends	3.0%	4.0%	*6.0%*
Book Value	4.5%	4.0%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	11.3	12.3	12.7	12.3	48.6
2018	11.6	12.0	12.7	12.1	48.4
2019	11.8	13.0	13.7	13.1	51.6
2020	12.9	13.3	14.3	*13.0*	*53.5*
2021	*13.0*	*13.5*	*14.5*	*13.5*	*54.5*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.20	.23	.31	.27	1.01
2018	.20	.26	.29	.29	1.04
2019	.22	.28	.35	.26	1.11
2020	.31	.32	.36	*.31*	*1.30*
2021	*.28*	*.35*	*.37*	*.35*	*1.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666	.1666	.1733	.673
2019	.1733	.1733	.1733	.1802	.70
2020	.1802	.1802	.1802	.1874	
2021					

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2019, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 201,000. Has more than 71,400 customers. Residential customers accounted for 65% of 2019 revenues; commercial and industrial (28%); other (7%). It also provides sewer billing services. Incorporated: PA. York had 106 full-time employees at 12/31/19. President/Chief Executive Officer: J.T. Hand. Officers/directors own 1.2% of the common stock (3/20 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water raised its quarterly dividend payment for the 24th-consecutive year. The distribution was increased 4%, to $0.1874 per share, equating to an annual return of about 1.6%. Though the water utility has historically been a consistent income generator, given several years of share-price advances, conservative yield-seeking investors might be better suited elsewhere at this juncture.

We think York delivered strong top- and bottom-line growth in 2020, which will likely be followed up by moderate expansion in 2021. The company posted revenues of $14.3 million and earnings of $0.36 a share in the September period, improving decently on a year-over-year basis and falling relatively in line with expectations. Fourth-quarter results were probably solid, too, driven by higher household water consumption and an expanding customer base. For this year, we are reiterating our calls for low single-digit revenue and earnings growth, to $54.5 million and $1.35 per share, respectively.

Long-term business prospects are bright, and should be accompanied by aggressive spending on infrastructure upgrades. Since our previous review, management invested nearly $7 million on a standpipe and other construction projects, with an estimated $12 million allocation likely tapped in the December period. Over the coming years, as the company's water delivery infrastructure ages and its customer base expands, York ought to spend heavily on pipe replacements, wastewater treatment facilities, service lines, and pumping stations. Overall, York should be able to recoup most of these investments via increased customer rates through its Distribution Systems Improvement Charge program, which requires approval from Pennsylvania regulators.

The stock price is hovering around recently etched all-time highs. Over the coming six to 12 months, YORW shares are pegged to outpace the broader market averages, thus ought to appeal to subscribers with a short-term horizon. On the other hand, 3- to 5-year total return potential is unenticing at recent levels. In fact, long-time investors might want to consider booking some profits at these elevated valuations.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Next earnings report due early February.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	65
Earnings Predictability	100

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Community Utilities of Pennsylvania, Inc.
Summary of Risk Premium Models for the
Proxy Group of Seven Water Companies

	Proxy Group of Seven Water Companies	
Predictive Risk Premium Model (PRPM) (1)	11.35	%
Risk Premium Using an Adjusted Total Market Approach (2)	10.44	%
Average	10.90	%

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	
Proxy Group of Seven Water Companies	LT Average Predicted Variance	Spot Predicted Variance	Recommended Variance (2)	GARCH Coefficient	Predicted Risk Premium (3)	Risk-Free Rate (4)	Indicated ROE (5)	
American States Water Company	0.38%	0.34%	0.38%	1.8385	8.67%	2.48%	11.15%	
American Water Works Company, Inc.	0.23%	0.19%	0.23%	5.6955	17.01%	2.48%	19.49%	(6)
California Water Service Group	0.32%	0.35%	0.32%	2.0043	7.91%	2.48%	10.39%	
Essential Utilities, Inc.	0.44%	0.40%	0.44%	2.2352	12.51%	2.48%	14.99%	
Middlesex Water Company	0.30%	0.35%	0.30%	2.1038	7.95%	2.48%	10.43%	
SJW Group	0.41%	0.37%	0.41%	1.5275	7.86%	2.48%	10.34%	
York Water Company	0.44%	0.36%	0.44%	2.0784	11.66%	2.48%	14.14%	
						Average	11.91%	
						Median	10.79%	
						Average of Mean and Median	11.35%	

NMF = Not Meaningful Figure

Notes:

(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.

(2) Given current market conditions, I recommend using the long-term average predicted variance.

(3) $(1+(\text{Column [3]} * \text{Column [4]})^{\wedge 12}) - 1$.

(4) From note 2 on page 2 of Schedule DWD-5.

(5) Column [5] + Column [6].

(6) Results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Seven Water Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.19	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.45	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.64	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.05	(3)
5.	Adjusted Prospective Bond Yield	3.69	%
6.	Equity Risk Premium (4)	6.75	
7.	Risk Premium Derived Common Equity Cost Rate	10.44	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10 and 11 of this Schedule).
(2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.45% from page 4 of this Schedule.
(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 5 of this Schedule. The 0.05% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.28% = 0.05%) as derived from page 4 of this Schedule.
(4) From page 7 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1] Aaa Rated Corporate Bond	[2] A2 Rated Public Utility Bond	[3] Baa2 Rated Public Utility Bond
Feb-2021	2.70 %	3.09 %	3.37 %
Jan-2021	2.45	2.91	3.19
Dec-2020	2.26	2.77	3.05
Average	2.47 %	2.92 %	3.20 %

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:
0.45 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:
0.28 % (2)

Notes:
(1) Column [2] - Column [1].
(2) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Service

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for
Proxy Group of Seven Water Companies

	Moody's Long-Term Issuer Rating February 2021		Standard & Poor's Long-Term Issuer Rating February 2021	
Proxy Group of Seven Water Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting(1)
American States Water Company (2)	A2	6.0	A+	5.0
American Water Works Company Inc (3)	A3	7.0	A	6.0
California Water Service Group (4)	NR	- -	A+	5.0
Essential Utilities, Inc. (5)	NR	- -	A	6.0
Middlesex Water Company	NR	- -	A	6.0
SJW Group (6)	NR	- -	A/A-	6.5
York Water Company	NR	- -	A-	7.0
Average	A2/A3	6.5	A	5.9

Notes:

(1) From page 6 of this Schedule.
(2) Ratings that of Golden State Water Company.
(3) Ratings that of New Jersey and Pennsylvania American Water Companies.
(4) Ratings that of California Water Service Company.
(5) Ratings that of Aqua Pennsylvania, Inc.
(6) Ratings that of San Jose Water Company and The Connecticut Water Company.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Community Utilities of Pennsylvania, Inc.
Judgment of Equity Risk Premium for the
Proxy Group of Seven Water Companies

Line No.		Proxy Group of Seven Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	7.63 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A2 rated bonds (2)	5.86
3.	Average equity risk premium	6.75 %

Notes: (1) From page 8 of this Schedule.
(2) From page 12 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Seven Water Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.78 %
2.	Regression on Ibbotson Risk Premium Data (2)	9.15
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.69
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.56
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.15
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.16
7.	Conclusion of Equity Risk Premium	9.08 %
8.	Adjusted Beta (7)	0.84
9.	Forecasted Equity Risk Premium	7.63 %

Notes provided on page 9 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Water Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2020 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa2 corporate bonds from 1928-2019.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa2 rated corporate bond yields from 1928-2019 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa2 corporate monthly bond yields, from January 1928 through February 2021.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.19% (from page 3 of this Schedule) from the projected 3-5 year total annual market return of 8.75% (described fully in note 1 on page 2 of Schedule DWD-5).

(5) Using data from Value Line for the S&P 500, an expected total return of 14.34% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.19% results in an expected equity risk premium of 11.15%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 16.35% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.19% results in an expected equity risk premium of 13.16%.

(7) Average of mean and median beta from Schedule DWD-5.

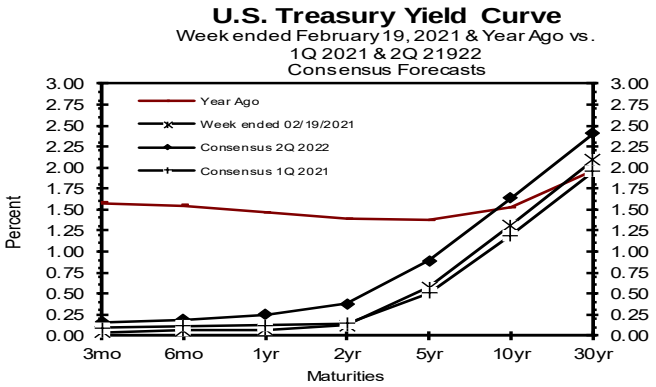
Sources of Information:

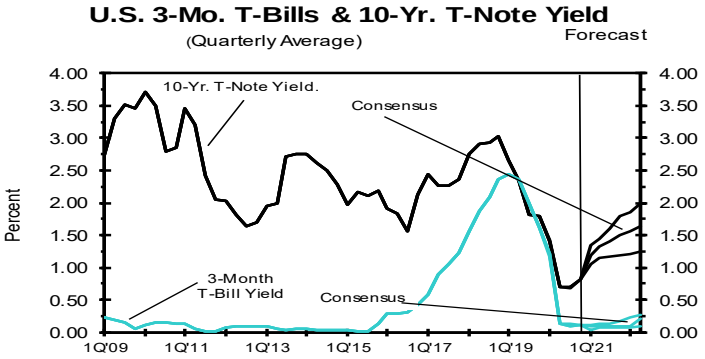
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2021 and December 1, 2020
Bloomberg Professional Service

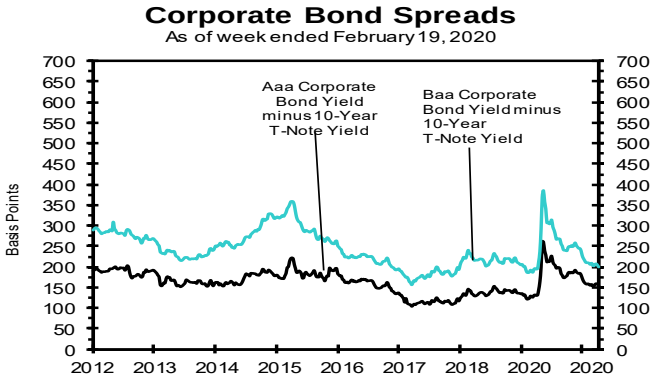
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

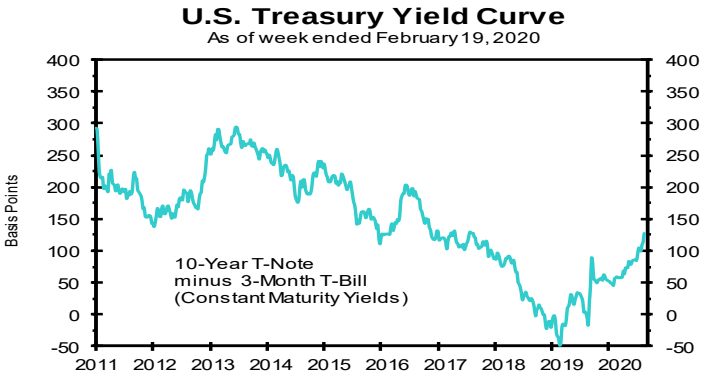
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	1Q	2Q	3Q	4Q	1Q	2Q
Interest Rates	Feb 19	Feb 12	Feb 5	Jan 29	Jan	Dec	Nov	4Q 2020	2021	2021	2021	2021	2022	2022
Federal Funds Rate	0.08	0.08	0.07	0.08	0.09	0.09	0.09	0.09	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**
LIBOR, 3-mo.	0.18	0.20	0.19	0.21	0.22	0.23	0.22	0.22	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**
Commercial Paper, 1-mo.	0.07	0.06	0.07	0.07	0.08	0.09	0.09	0.09	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**
Treasury bill, 3-mo.	0.04	0.05	0.05	0.07	0.08	0.09	0.09	0.09	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
Treasury bill, 6-mo.	0.06	0.06	0.07	0.08	0.09	0.09	0.10	0.10	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
Treasury bill, 1 yr.	0.07	0.07	0.07	0.09	0.10	0.10	0.12	0.12	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**
Treasury note, 2 yr.	0.12	0.11	0.11	0.12	0.13	0.14	0.17	0.15	**0.1**	**0.2**	**0.2**	**0.3**	**0.3**	**0.4**
Treasury note, 5 yr.	0.57	0.48	0.45	0.42	0.45	0.39	0.39	0.37	**0.5**	**0.6**	**0.7**	**0.8**	**0.8**	**0.9**
Treasury note, 10 yr.	1.31	1.18	1.14	1.06	1.08	0.93	0.87	0.86	**1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**1.6**
Treasury note, 30 yr.	2.09	1.96	1.91	1.81	1.82	1.67	1.62	1.62	**2.0**	**2.1**	**2.2**	**2.3**	**2.4**	**2.4**
Corporate Aaa bond	2.86	2.77	2.74	2.64	2.64	2.52	2.58	2.58	**2.6**	**2.8**	**2.9**	**3.0**	**3.0**	**3.1**
Corporate Baa bond	3.31	3.22	3.21	3.13	3.14	3.03	3.13	3.14	**3.5**	**3.7**	**3.8**	**3.9**	**4.0**	**4.0**
State & Local bonds	2.60	2.58	2.62	2.61	2.65	2.70	2.82	2.82	**2.6**	**2.7**	**2.8**	**2.9**	**3.0**	**3.0**
Home mortgage rate	2.81	2.73	2.73	2.73	2.74	2.68	2.77	2.76	**2.9**	**3.0**	**3.1**	**3.2**	**3.3**	**3.4**
	History								Consensus Forecasts-Quarterly					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Key Assumptions	2019	2019	2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022
Fed's AFE $ Index	109.5	110.4	110.6	110.5	111.4	112.4	107.3	105.2	**103.6**	**103.2**	**103.1**	**103.2**	**102.9**	**103.0**
Real GDP	2.9	1.5	2.6	2.4	-5.0	-31.4	33.4	4.1	**4.3**	**6.8**	**6.3**	**4.6**	**3.3**	**2.9**
GDP Price Index	1.2	2.5	1.5	1.4	1.4	-1.8	3.5	2.1	**2.2**	**1.8**	**1.9**	**1.9**	**1.9**	**2.0**
Consumer Price Index	0.7	3.5	1.3	2.6	1.0	-3.1	4.7	2.4	**2.8**	**2.0**	**2.0**	**2.1**	**2.1**	**2.1**
PCE Price Index	0.6	2.5	1.4	1.5	1.3	-1.6	3.7	1.6	**2.7**	**1.9**	**1.9**	**1.9**	**1.9**	**2.0**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).









Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2022 through 2026 and averages for the five-year periods 2022-2026 and 2027-2031. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year					Five-Year Averages	
		2022	2023	2024	2025	2026	2022-2026	2027-2031
1. Federal Funds Rate	CONSENSUS	**0.1**	**0.3**	**0.7**	**1.2**	**1.5**	**0.8**	**1.8**
	Top 10 Average	0.2	0.7	1.4	2.0	2.4	1.3	2.5
	Bottom 10 Average	0.1	0.1	0.2	0.4	0.6	0.3	1.2
2. Prime Rate	CONSENSUS	**3.3**	**3.5**	**3.9**	**4.3**	**4.6**	**3.9**	**4.9**
	Top 10 Average	3.4	3.7	4.4	5.0	5.4	4.4	5.4
	Bottom 10 Average	3.2	3.2	3.3	3.5	3.8	3.4	4.5
3. LIBOR, 3-Mo.	CONSENSUS	**0.4**	**0.6**	**1.1**	**1.5**	**1.8**	**1.1**	**2.2**
	Top 10 Average	0.5	1.0	1.7	2.2	2.6	1.6	2.7
	Bottom 10 Average	0.3	0.3	0.5	0.8	1.1	0.6	1.6
4. Commercial Paper, 1-Mo	CONSENSUS	**0.3**	**0.7**	**1.2**	**1.6**	**1.9**	**1.1**	**2.1**
	Top 10 Average	0.4	0.9	1.6	2.1	2.4	1.5	2.5
	Bottom 10 Average	0.2	0.4	0.8	1.2	1.5	0.8	1.7
5. Treasury Bill Yield, 3-Mo	CONSENSUS	**0.2**	**0.4**	**0.8**	**1.2**	**1.5**	**0.8**	**1.9**
	Top 10 Average	0.3	0.7	1.5	2.0	2.4	1.4	2.5
	Bottom 10 Average	0.1	0.1	0.2	0.5	0.7	0.3	1.3
6. Treasury Bill Yield, 6-Mo	CONSENSUS	**0.2**	**0.5**	**0.9**	**1.3**	**1.6**	**0.9**	**2.0**
	Top 10 Average	0.3	0.8	1.6	2.1	2.5	1.5	2.6
	Bottom 10 Average	0.1	0.2	0.3	0.5	0.8	0.4	1.4
7. Treasury Bill Yield, 1-Yr	CONSENSUS	**0.3**	**0.6**	**1.0**	**1.4**	**1.8**	**1.0**	**2.1**
	Top 10 Average	0.5	1.0	1.7	2.3	2.6	1.6	2.7
	Bottom 10 Average	0.2	0.3	0.4	0.7	0.9	0.5	1.6
8. Treasury Note Yield, 2-Yr	CONSENSUS	**0.4**	**0.8**	**1.2**	**1.6**	**1.9**	**1.2**	**2.3**
	Top 10 Average	0.7	1.2	1.9	2.4	2.8	1.8	2.9
	Bottom 10 Average	0.2	0.3	0.6	0.8	1.1	0.6	1.7
9. Treasury Note Yield, 5-Yr	CONSENSUS	**0.8**	**1.2**	**1.6**	**2.0**	**2.3**	**1.5**	**2.5**
	Top 10 Average	1.1	1.6	2.3	2.8	3.1	2.1	3.1
	Bottom 10 Average	0.5	0.7	1.0	1.2	1.4	1.0	1.9
10. Treasury Note Yield, 10-Yr	CONSENSUS	**1.3**	**1.7**	**2.0**	**2.4**	**2.6**	**2.0**	**2.8**
	Top 10 Average	1.7	2.2	2.7	3.1	3.4	2.6	3.5
	Bottom 10 Average	0.9	1.2	1.4	1.7	1.8	1.4	2.2
11. Treasury Bond Yield, 30-Yr	CONSENSUS	**2.1**	**2.4**	**2.8**	**3.1**	**3.4**	**2.8**	**3.6**
	Top 10 Average	2.5	3.0	3.5	4.0	4.2	3.4	4.3
	Bottom 10 Average	1.6	1.9	2.2	2.4	2.6	2.1	2.9
12. Corporate Aaa Bond Yield	CONSENSUS	**2.8**	**3.2**	**3.6**	**4.0**	**4.2**	**3.6**	**4.5**
	Top 10 Average	3.1	3.6	4.2	4.6	4.9	4.1	5.0
	Bottom 10 Average	2.4	2.8	3.0	3.3	3.6	3.0	3.9
13. Corporate Baa Bond Yield	CONSENSUS	**3.9**	**4.3**	**4.7**	**5.0**	**5.2**	**4.6**	**5.4**
	Top 10 Average	4.3	4.7	5.2	5.6	5.9	5.1	6.0
	Bottom 10 Average	3.5	3.9	4.1	4.3	4.5	4.1	4.9
14. State & Local Bonds Yield	CONSENSUS	**2.8**	**3.1**	**3.4**	**3.6**	**3.8**	**3.3**	**3.9**
	Top 10 Average	3.1	3.5	3.8	4.1	4.3	3.8	4.3
	Bottom 10 Average	2.5	2.8	2.9	3.2	3.4	2.9	3.6
15. Home Mortgage Rate	CONSENSUS	**3.2**	**3.5**	**3.9**	**4.2**	**4.5**	**3.9**	**4.7**
	Top 10 Average	3.5	3.9	4.4	4.9	5.2	4.4	5.2
	Bottom 10 Average	2.9	3.2	3.4	3.6	3.8	3.4	4.2
A. Fed's AFE Nominal $ Index	CONSENSUS	**107.2**	**107.0**	**106.5**	**106.4**	**106.6**	**106.7**	**106.7**
	Top 10 Average	109.0	108.9	108.8	108.9	109.5	109.0	110.2
	Bottom 10 Average	105.4	105.2	104.4	103.8	103.7	104.5	103.0
		Year-Over-Year, % Change					Five-Year Averages	
		2022	2023	2024	2025	2026	2022-2026	2027-2031
B. Real GDP	CONSENSUS	**3.2**	**2.5**	**2.3**	**2.2**	**2.1**	**2.4**	**2.1**
	Top 10 Average	3.8	3.0	2.6	2.5	2.4	2.9	2.4
	Bottom 10 Average	2.6	2.1	1.9	1.9	1.8	2.1	1.8
C. GDP Chained Price Index	CONSENSUS	**1.9**	**2.0**	**2.1**	**2.1**	**2.1**	**2.0**	**2.1**
	Top 10 Average	2.2	2.3	2.3	2.3	2.3	2.3	2.3
	Bottom 10 Average	1.7	1.8	1.9	1.9	1.9	1.8	1.9
D. Consumer Price Index	CONSENSUS	**2.1**	**2.2**	**2.2**	**2.1**	**2.2**	**2.1**	**2.2**
	Top 10 Average	2.4	2.4	2.4	2.4	2.4	2.4	2.4
	Bottom 10 Average	1.8	1.9	1.9	1.9	1.9	1.9	1.9
E. PCE Price Index	CONSENSUS	**1.9**	**2.0**	**2.1**	**2.1**	**2.1**	**2.0**	**2.1**
	Top 10 Average	2.2	2.2	2.2	2.2	2.3	2.2	2.4
	Bottom 10 Average	1.7	1.8	1.9	1.9	1.9	1.8	1.9

Community Utilities of Pennsylvania, Inc.
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.21 %
2.	Regression of Historical Equity Risk Premium (2)	6.76
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.51
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	7.10
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.72
6.	Average Equity Risk Premium (6)	5.86 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2019. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2019 referenced in note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - February 2021.

(4) Using data from Value Line for the S&P Utilities Index, an expected return of 10.74% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.64%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 7.10%. (10.74% - 3.64% = 7.10%)

(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.36% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.64%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 5.72%. (9.36% - 3.64% = 5.72%)

(6) Average of lines 1 through 5.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seven Water Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Company	0.65	0.58	0.62	9.94 %	2.48 %	8.64 %	9.59 %	9.11 %
American Water Works Company, Inc.	0.85	1.01	0.93	9.94	2.48	11.72	11.90	11.81
California Water Service Group	0.65	0.61	0.63	9.94	2.48	8.74	9.66	9.20
Essential Utilities, Inc.	0.95	1.02	0.98	9.94	2.48	12.22	12.27	12.24
Middlesex Water Company	0.75	0.76	0.76	9.94	2.48	10.03	10.63	10.33
SJW Group	0.85	0.95	0.90	9.94	2.48	11.42	11.67	11.55
York Water Company	0.80	0.94	0.87	9.94	2.48	11.13	11.45	11.29
Mean			0.81			10.56 %	11.02 %	10.79 %
Median			0.87			11.13 %	11.45 %	11.29 %
Average of Mean and Median			0.84			10.85	11.24	11.04 %

Notes on page 2 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2019)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2019:	12.10	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.09	
MRP based on Ibbotson Historical Data:	7.01	%

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2019)	9.81	%

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - February 2021)	10.81	%

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending February 26, 2021)

Total projected return on the market 3-5 years hence*:	8.75	%
Projected Risk-Free Rate (see note 2):	2.48	
MRP based on Value Line Summary & Index:	6.27	%

*Forcasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	14.34	%
Projected Risk-Free Rate (see note 2):	2.48	
MRP based on Value Line data	11.86	%

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	16.35	%
Projected Risk-Free Rate (see note 2):	2.48	
MRP based on Bloomberg data	13.87	%
Average of Value Line, Ibbotson, and Bloomberg MRP:	9.94	%

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 10-11 of Schedule DWD-4.) The projection of the risk-free rate is illustrated below:

First Quarter 2021	2.00	%
Second Quarter 2021	2.10	
Third Quarter 2021	2.20	
Fourth Quarter 2021	2.30	
First Quarter 2022	2.40	
Second Quarter 2022	2.40	
2022-2026	2.80	
2027-2031	3.60	
	2.48	%

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2021 and December 1, 2020
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group was then selected based on the unadjusted beta range of 0.46 – 0.78 and residual standard error of the regression range of 2.9198 – 3.4826 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Utility Proxy Group's residual standard error of the regression is 0.1407. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1407 = \frac{3.2012}{\sqrt{518}} = \frac{3.2012}{22.7596}$$

Source of Information: Value Line, Inc., January 2021
Value Line Investment Survey (Standard Edition)

Community Utilities of Pennsylvania, Inc.
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

Proxy Group of Seven Water Companies	[1] Value Line Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
American States Water Company	0.65	0.42	2.7095	0.0681
American Water Works Company, Inc.	0.85	0.74	3.1550	0.0793
California Water Service Group	0.65	0.41	3.0820	0.0775
Essential Utilities, Inc.	0.95	0.86	2.7562	0.0693
Middlesex Water Company	0.75	0.56	3.4739	0.0873
SJW Group	0.85	0.70	3.5772	0.0899
York Water Company	0.80	0.68	3.6547	0.0919
Average	0.79	0.62	3.2012	0.0805

Beta Range (+/- 2 std. Devs. of Beta)	0.46	0.78
2 std. Devs. of Beta	0.16	
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.9198	3.4826
Std. dev. of the Res. Std. Err.	0.1407	
2 std. devs. of the Res. Std. Err.	0.2814	

Source of Information: Valueline Proprietary Database, January 2021

Community Utilities of Pennsylvania, Inc.
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Water Companies

Proxy Group of Twenty-Six Non-Price Regulated Companies	[1] VL Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Adobe, Inc.	0.75	0.61	3.1957	0.0803
Bio-Rad Labs	0.80	0.62	3.1060	0.0781
Bristol-Myers Squibb	0.85	0.75	3.3451	0.0841
Caseys General Stores, Inc.	0.85	0.71	3.2464	0.0816
C.H. Robinson Worldwide Inc	0.65	0.47	2.9403	0.0739
CSG Systems Int'l	0.75	0.59	3.2443	0.0816
Citrix Sys.	0.70	0.49	3.4414	0.0865
Dollar General Corporation	0.70	0.47	3.2430	0.0815
Ennis, Inc.	0.80	0.65	3.3129	0.0833
FirstCash, Inc.	0.85	0.72	3.1426	0.0790
Heartland Express	0.75	0.57	3.0941	0.0778
Ingredion Inc.	0.90	0.78	2.9266	0.0736
Intel Corp.	0.85	0.70	3.3366	0.0839
Lancaster Colony Corp.	0.70	0.52	3.0966	0.0778
Lilly (Eli)	0.75	0.55	2.9808	0.0749
ManTech Int'l 'A'	0.85	0.72	3.0697	0.0772
MAXIMUS, Inc.	0.80	0.69	3.2296	0.0812
Monster Beverage Corporation	0.85	0.73	3.4547	0.0869
Smucker (J.M.)	0.70	0.48	3.0571	0.0769
Schneider National, Inc.	0.80	0.66	3.4457	0.0919
Bio-Techne Corp.	0.80	0.63	3.1829	0.0800
TriMas Corporation	0.90	0.77	3.4140	0.0858
Tyler Technologies	0.75	0.57	3.2350	0.0813
United Parcel Serv.	0.80	0.64	2.9674	0.0746
Walgreens Boots Alliance	0.75	0.61	3.1780	0.0799
West Pharmaceutical Services Inc	0.80	0.69	3.1948	0.0803
Average	0.79	0.63	3.1954	0.0805
Proxy Group of Seven Water Companies	0.79	0.62	3.2012	0.0805

Source of Information: Valueline Proprietary Database, January 2021

Community Utilities of Pennsylvania, Inc.
Summary of Cost of Equity Models Applied to
Proxy Group of Twenty-Six Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Water Companies

Principal Methods	Proxy Group of Twenty-Six Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)	11.05 %
Risk Premium Model (RPM) (2)	11.42
Capital Asset Pricing Model (CAPM) (3)	10.82
Mean	11.10 %
Median	11.05 %
Average of Mean and Median	11.08 %

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.
(3) From page 6 of this Schedule.

Community Utilities of Pennsylvania, Inc.
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty-Six Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Bloomberg Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Adobe, Inc.	- %	14.00 %	19.00 %	16.67 %	15.98 %	16.41 %	- %	NA %
Bio-Rad Labs	-	11.50	NA	17.80	28.75	19.35	-	NA
Bristol-Myers Squibb	3.15	12.50	6.00	21.35	30.61	17.61	3.43	21.04 (2)
Caseys General Stores, Inc.	0.72	9.00	NA	7.40	16.31	10.90	0.76	11.66
C.H. Robinson Worldwide Inc	2.20	7.00	9.00	9.94	8.95	8.72	2.30	11.02
CSG Systems Int'l	2.22	10.00	NA	(5.00)	8.00	9.00	2.32	11.32
Citrix Sys.	1.12	9.00	8.10	10.85	10.30	9.56	1.17	10.73
Dollar General Corporation	0.70	13.00	13.70	17.31	15.30	14.83	0.75	15.58
Ennis, Inc.	4.91	3.00	NA	5.00	NA	4.00	5.01	9.01
FirstCash, Inc.	1.68	9.50	NA	23.80	NA	16.65	1.82	18.47
Heartland Express	0.43	10.00	NA	12.50	NA	11.25	0.45	11.70
Ingredion Inc.	3.15	6.00	NA	1.90	11.00	6.30	3.25	9.55
Intel Corp.	2.55	7.00	7.50	5.43	5.24	6.29	2.63	8.92
Lancaster Colony Corp.	1.70	6.50	NA	3.00	NA	4.75	1.74	6.49
Lilly (Eli)	1.85	10.00	12.20	11.60	NA	11.27	1.95	13.22
ManTech Int'l 'A'	1.75	12.00	5.10	4.53	6.53	7.04	1.81	8.85
MAXIMUS, Inc.	1.46	10.50	NA	12.50	5.00	9.33	1.53	10.86
Monster Beverage Corporation	-	12.50	12.00	14.67	13.07	13.06	-	NA
Smucker (J.M.)	3.12	2.50	1.50	(0.72)	1.28	1.76	3.15	4.91
Schneider National, Inc.	1.28	2.50	14.00	15.25	14.48	11.56	1.35	12.91
Bio-Techne Corp.	0.37	NMF	15.00	15.00	13.53	14.51	0.40	14.91
TriMas Corporation	-	10.00	NA	9.34	5.00	8.11	-	NA
Tyler Technologies	-	10.50	15.00	10.00	18.43	13.48	-	NA
United Parcel Serv.	2.49	8.00	8.70	10.06	8.04	8.70	2.60	11.30
Walgreens Boots Alliance	4.11	6.00	5.70	3.85	3.64	4.80	4.21	9.01
West Pharmaceutical Services Inc	0.24	17.00	22.60	22.60	18.01	20.05	0.26	20.31 (2)
							Mean	11.07 %
							Median	11.02 %
							Average of Mean and Median	11.05 %

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regluated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of February 26, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, Bloomberg, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

(2) DCF results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 02/26/2021
www.yahoo.com Downloaded on 02/26/2021
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Twenty-Six Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.11 %
2.	Adjustment to Reflect Proxy Group Bond Rating (2)	(0.14)
3.	Prospective Bond Yield Applicable to the Non-Price Regulated Proxy Group	3.97
4.	Equity Risk Premium (3)	7.45
5.	Risk Premium Derived Common Equity Cost Rate	11.42 %

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated March 1, 2021 and December 1, 2020 (see pages 10 and 11 of Schedule DWD-4). The estimates are detailed below.

First Quarter 2021	3.50 %
Second Quarter 2021	3.70
Third Quarter 2021	3.80
Fourth Quarter 2021	3.90
First Quarter 2022	4.00
Second Quarter 2022	4.00
2022-2026	4.60
2027-2031	5.40
Average	4.11 %

(2) To reflect the Baa1 average rating of the Non-Price Regulated Proxy Group, the prosepctive yield on Baa2 corporate bonds must be adjusted downward by 1/3 of the spread between A2 and Baa2 corporate bond yields as shown below:

	A2 Corp. Bond Yield	Baa2 Corp. Bond Yield	Spread
Feb-2021	3.03 %	3.42 %	0.39 %
Jan-2021	2.84	3.25	0.41
Dec-2020	2.72	3.16	0.44
		Average yield spread	0.41 %
		1/3 of spread	0.14 %

(3) From page 5 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Twenty-Six Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Water Companies

	Moody's Long-Term Issuer Rating February 2021		Standard & Poor's Long-Term Issuer Rating February 2021	
Proxy Group of Twenty-Six Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Adobe, Inc.	A2	6.0	A	6.0
Bio-Rad Labs	Baa2	9.0	BBB	9.0
Bristol-Myers Squibb	A2	6.0	A+	5.0
Caseys General Stores, Inc.	NR	--	NR	--
C.H. Robinson Worldwide Inc	Baa2	9.0	BBB+	8.0
CSG Systems Int'l	NA	--	BB+	11.0
Citrix Sys.	Baa3	10.0	BBB	9.0
Dollar General Corporation	Baa2	9.0	BBB	9.0
Ennis, Inc.	NR	--	NR	--
FirstCash, Inc.	Ba1	11.0	BB	12.0
Heartland Express	NR	--	NR	--
Ingredion Inc.	Baa1	8.0	BBB	9.0
Intel Corp.	A1	5.0	A+	5.0
Lancaster Colony Corp.	NR	--	NR	--
Lilly (Eli)	A2	6.0	A+	5.0
ManTech Int'l 'A'	NR	--	BB+	11.0
MAXIMUS, Inc.	NR	--	NR	--
Monster Beverage Corporation	NR	--	NR	--
Smucker (J.M.)	Baa2	9.0	BBB	9.0
Schneider National, Inc.	NR	--	NR	--
Bio-Techne Corp.	NR	--	NR	--
TriMas Corporation	Ba3	13.0	BB	12.0
Tyler Technologies	NR	--	NR	--
United Parcel Serv.	A2	6.0	A-	7.0
Walgreens Boots Alliance	Baa2	9.0	BBB	9.0
West Pharmaceutical Services Inc	NR	--	NR	--
Average	Baa1	8.3	BBB+/BBB	8.5

Notes:
(1) From page 6 of Schedule DWD-4.

Source of Information:
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Twenty-Six Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Twenty-Six Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.78 %
2.	Regression on Ibbotson Risk Premium Data (2)	9.15
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.69
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.56
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.15
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.16
7.	Conclusion of Equity Risk Premium	9.08 %
8.	Adjusted Beta (7)	0.82
9.	Forecasted Equity Risk Premium	7.45 %

Notes:
(1) From note 1 of page 9 of Schedule DWD-4.
(2) From note 2 of page 9 of Schedule DWD-4.
(3) From note 3 of page 9 of Schedule DWD-4.
(4) From note 4 of page 9 of Schedule DWD-4.
(5) From note 5 of page 9 of Schedule DWD-4.
(6) From note 6 of page 9 of Schedule DWD-4.
(7) Average of mean and median beta from page 6 of this Schedule.

Sources of Information:
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, March 1, 2021 and December 1, 2020
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty-Six Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Adobe, Inc.	0.75	0.86	0.81	9.94 %	2.48 %	10.53 %	11.00 %	10.77 %
Bio-Rad Labs	0.75	0.69	0.72	9.94	2.48	9.64	10.33	9.98
Bristol-Myers Squibb	0.85	0.81	0.83	9.94	2.48	10.73	11.15	10.94
Caseys General Stores, Inc.	0.85	0.91	0.88	9.94	2.48	11.23	11.52	11.37
C.H. Robinson Worldwide Inc	0.70	0.66	0.68	9.94	2.48	9.24	10.03	9.64
CSG Systems Int'l	0.75	0.92	0.83	9.94	2.48	10.73	11.15	10.94
Citrix Sys.	0.70	0.62	0.66	9.94	2.48	9.04	9.88	9.46
Dollar General Corporation	0.70	0.64	0.67	9.94	2.48	9.14	9.96	9.55
Ennis, Inc.	0.80	0.83	0.82	9.94	2.48	10.63	11.08	10.85
FirstCash, Inc.	0.85	0.95	0.90	9.94	2.48	11.42	11.67	11.55
Heartland Express	0.70	0.76	0.73	9.94	2.48	9.73	10.41	10.07
Ingredion Inc.	0.90	0.93	0.92	9.94	2.48	11.62	11.82	11.72
Intel Corp.	0.85	0.97	0.91	9.94	2.48	11.52	11.75	11.64
Lancaster Colony Corp.	0.70	0.71	0.71	9.94	2.48	9.54	10.26	9.90
Lilly (Eli)	0.75	0.72	0.73	9.94	2.48	9.73	10.41	10.07
ManTech Int'l 'A'	0.85	1.11	0.98	9.94	2.48	12.22	12.27	12.24
MAXIMUS, Inc.	0.80	0.90	0.85	9.94	2.48	10.93	11.30	11.11
Monster Beverage Corporation	0.85	1.00	0.92	9.94	2.48	11.62	11.82	11.72
Smucker (J.M.)	0.70	0.50	0.60	9.94	2.48	8.44	9.44	8.94 (4)
Schneider National, Inc.	0.80	0.73	0.77	9.94	2.48	10.13	10.70	10.42
Bio-Techne Corp.	0.80	0.91	0.85	9.94	2.48	10.93	11.30	11.11
TriMas Corporation	0.90	0.97	0.94	9.94	2.48	11.82	11.97	11.90
Tyler Technologies	0.75	0.76	0.76	9.94	2.48	10.03	10.63	10.33
United Parcel Serv.	0.80	0.85	0.83	9.94	2.48	10.73	11.15	10.94
Walgreens Boots Alliance	0.75	0.79	0.77	9.94	2.48	10.13	10.70	10.42
West Pharmaceutical Services Inc	0.85	0.77	0.81	9.94	2.48	10.53	11.00	10.77
Mean			0.81			10.54 %	11.01 %	10.78 %
Median			0.82			10.63 %	11.08 %	10.85 %
Average of Mean and Median			0.82			10.59 %	11.05 %	10.82 %

Notes:
(1) From Schedule DWD-5, note 1.
(2) From Schedule DWD-5, note 2.
(3) Average of CAPM and ECAPM cost rates.
(4) Results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on February 26, 2021 (1) (millions)	[1] (times larger)	[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	Community Utilities of Pennsylvania, Inc.	$ 36.935		10	5.01%	
2.	Proxy Group of Seven Water Companies	$ 6,259.961	169.5 x	4	0.75%	4.26%

	[A] Decile	[B] Market Capitalization of Smallest Company (millions)	[C] Market Capitalization of Largest Company (millions)	[D] Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,025.803	$ 1,966,078.882	-0.22%
	2	13,178.743	28,808.073	0.49%
	3	6,743.361	13,177.828	0.71%
	4	3,861.858	6,710.676	0.75%
	5	2,445.693	3,836.536	1.09%
	6	1,591.865	2,444.745	1.37%
	7	911.586	1,591.765	1.54%
	8	451.955	911.103	1.46%
	9	190.019	451.800	2.29%
Smallest	10	2.194	189.831	5.01%

*From Duff & Phelps Cost of Capital Navigator,
CRSP Size Premia as of 12/31/2020

Notes:

(1) From page 2 of this Schedule.
(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 4.26% in Column [4], Line No. 2 is derived as follows 4.26% = 5.01% - 0.75%.

Community Utilities of Pennsylvania, Inc.
Market Capitalization of Community Utilities of Pennsylvania, Inc. and the
Proxy Group of Seven Water Companies

	Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2019 (millions)	[2] Book Value per Share at Fiscal Year End 2019 (1)	[3] Total Common Equity at Fiscal Year End 2019 (millions)	[4] Closing Stock Market Price on February 26, 2021	[5] Market-to-Book Ratio on February 26, 2021 (2)	[6] Market Capitalization on February 26, 2021 (3) (millions)
	Community Utilities of Pennsylvania, Inc.		NA	NA	$ 10.678 (4)	NA		
	Based upon Proxy Group of Seven Water Companies						345.9 (5)	$ 36.935 (6)
	Proxy Group of Seven Water Companies							
AWR	American States Water Company	NYSE	36.847	$ 16.325	$ 601.530	$ 73.050	447.5 %	$ 2,691.645
AWK	American Water Works Company, Inc.	NYSE	180.813	33.853	6,121.000	141.880	419.1	25,653.730
CWT	California Water Service Group	NYSE	48.532	16.070	779.906	54.950	341.9	2,666.844
WTRG	Essential Utilities, Inc.	NYSE	220.759	17.580	3,880.860	42.060	239.2	9,285.112
MSEX	Middlesex Water Company	NASDAQ	17.434	18.572	323.792	68.670	369.8	1,197.193
SJW	SJW Group	NYSE	28.457	31.275	889.984	62.680	200.4	1,783.654
YORW	York Water Company	NASDAQ	13.015	10.310	134.185	41.610	403.6	541.550
	Average		77.979	$ 20.569	$ 1,818.751	$ 69.271	345.9 %	$ 6,259.961

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.
(4) Company requested rate base multiplied by Company requested equity ratio.
(5) The market-to-book ratio of Community Utilities of Pennsylvania, Inc. on February 26, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Seven Water Companies on February 26, 2021 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2019 Annual Forms 10K
Bloomberg Financial Services

CUPAWW STATEMENT NO. 6

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
(Wastewater Utility)

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

DIRECT TESTIMONY

OF

SCOTT A. MILLER

SPONSORING EXHIBITS CUPAWW EX SAM-1, CUPAWW EX SAM-2

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025207

Direct Testimony of Scott A. Miller

INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Scott A. Miller and my business address is 8365 Keystone Crossing, Suite 300, Indianapolis, Indiana 46240-0458.

Q. WHAT IS YOUR PROFESSION AND FOR WHOM ARE YOU EMPLOYED?

A. I am a Certified Public Accountant and a partner in the firm of Baker Tilly Municipal Advisors, LLC ("BTMA"). BTMA began operations on March 1, 2019, as the result of a three-way business combination between my prior firm, H.J. Umbaugh & Associates, Certified Public Accountants, LLP ("Umbaugh"), and Baker Tilly Virchow Krause, LLP which is now doing business as Baker Tilly US, LLP ("Baker Tilly"). One month later, the third firm, Springsted, Inc. joined BTMA. BTMA is a registered municipal advisor and controlled subsidiary of Baker Tilly, an accounting firm. I have included my curriculum vitae as CUPAWW Ex. SAM-2.

Q. CAN YOU DESCRIBE YOUR FIRM AND ITS AREA OF EXPERTISE?

A. Baker Tilly US, LLP is a national full-service advisory, tax, and assurance firm of nearly 4,500 professionals across the country. In addition, the firm is an independent member of Baker Tilly International, the world's 10th largest network made up of 126 independent accounting and business services firms in 145 territories, with 34,000 professionals. Baker

Tilly has a long history advising public sector clients and has a particular focus on the energy and utility industry having advised more than 600 energy and utility organizations in the United States. Our public sector practice area is comprised of a dedicated group of professionals who specialize in providing an array of services to public sector entities including utilities. As part of our public sector, BTMA has a concentrated focus on delivering municipal advisory services to governmental entities. A large portion of this practice includes accounting studies in connection with changes in utility rates and financial planning associated with the issuance of tax-exempt and taxable bonds and notes and other evidences of indebtedness. In accordance with rules promulgated by the Municipal Securities Rulemaking Board ("MSRB"), BTMA is registered as a Municipal Advisor with the Securities and Exchange Commission ("SEC").

Q. WHAT IS YOUR EDUCATIONAL EXPERIENCE?

A. In June 1995, I received a Bachelor of Science Degree from the Indiana University Kelley School of Business in Bloomington, Indiana. Since then I have completed various professional courses sponsored by the American Institute of Certified Public Accountants, the Indiana CPA Society and other professional organizations including the American Water Works Association ("AWWA") and the American Public Power Association ("APPA"). In 1998 I completed the AWWA cost of service and rate-making seminar. In 2010, I completed the APPA Intermediate and Advanced Utility Cost of Service and Retail Rate Design seminars.

Q. PLEASE DESCRIBE YOUR RELEVANT PROFESSIONAL EXPERIENCE.

A. I joined the firm of Umbaugh in June 1995 and, in 1998, completed the requirements to become licensed as a Certified Public Accountant in the State of Indiana. In July 2000 I assumed the position of client manager within Umbaugh. On July 1, 2005, I became a principal in Umbaugh and on January 1, 2009, I was admitted into Umbaugh's partnership. From 2015 through 2017, I served on Umbaugh's Management Committee and was responsible for overseeing the operations of the Firm's Accounting Service Group. From 2018 until February 28, 2019, I served on Umbaugh's Executive Committee responsible for the strategic direction of the Firm. As a result of the combination with Baker Tilly and Springsted, I became a partner in Baker Tilly on March 1, 2019. Since the business combination and the creation of BTMA, I have served on the Public Sector Senior Leadership Team which is tasked with developing and implementing the overall strategy of the Firm's Public Sector practice area.

Over the past twenty-six years, I have been involved with many professional engagements including financial studies for municipally owned water, electric, gas, steam and sewage utilities, for-profit and not-for-profit water and wastewater corporations, water authorities, regional water and wastewater districts and conservancy districts. These studies quite often have involved the determination of utility revenue requirements, cost of service studies, rate design and the financial planning associated with the issuance of tax-exempt and taxable bonds and notes to fund projects using a variety of financing mechanisms including USDA Rural Development ("RD"), State Revolving Funds ("SRF"), tax-exempt and taxable bonds issued on the open market and other sources. I have given speeches and participated in panels and workshops concerning utility rates, financing and project

development before the Indiana Rural Water Association, the Alliance of Indiana Rural Water, the Indiana Section of the American Water Works Association, the Indiana Association of Wastewater Companies, the Indiana Water Environment Association, Accelerate Indiana Municipalities (formerly the Indiana Association of Cities and Towns) and the APPA. In May 2016 I received my municipal advisor representative qualification by passing the newly-created Series 50 examination promulgated by the Municipal Securities Rulemaking Board (the "MSRB") and the Securities and Exchange Commission (the "SEC").

Q. WHAT PROFESSIONAL ORGANIZATIONS ARE YOU ASSOCIATED WITH?

A. I am a member of the American Institute of Certified Public Accountants, The Indiana CPA Society, the Indiana Water Environment Association and the American Water Works Association ("AWWA") and our firm is a member of numerous accounting and utility industry association including the Indiana Rural Water Association, the Alliance of Indiana Rural Water as well as the Indiana Municipal Electric Association. Our firm is also a strategic partner of AIM. In the latter capacity, we provide guidance on financial matters that affect communities across the State. Finally, I currently serve as the chairman of the Indiana Section AWWA Water Utility Council.

Q. HAVE YOU TESTIFIED BEFORE AS AN EXPERT WITNESS?

A. Yes, I have testified before the Pennsylvania Public Utility Commission and the Indiana Utility Regulatory Commission as well as numerous local government boards and councils on many previous occasions. This testimony has covered the development of appropriate

revenue requirements, utility valuation, financing approval and across-the-board and cost of service analysis and rate design.

OVERVIEW OF TESTIMONY AND EXHIBIT

Q. WAS YOUR FIRM RETAINED BY COMMUNITY UTILITIES OF PENNSYLVANIA, INC. ("CUPA" OR "COMPANY") IN CONNECTION WITH THESE PROCEEDINGS?

A. Yes. We were retained by CUPA to prepare consolidated state-wide cost of service studies for the Company's water and wastewater divisions. These analyses were then used as a basis to make recommendations regarding changes in the Company's present schedules of rates and charges for water and wastewater service.

Q. HAVE THE RESULTS OF YOUR ANALYSIS BEEN SUMMARIZED IN A WRITTEN REPORT?

A. Yes. Our firm prepared a Special Purpose Accounting Report dated April 12, 2021 summarizing the results of our studies for the Company's wastewater divisions. A similar report was prepared for the Company's water divisions and will be submitted with my testimony regarding the water division. These reports were both subsequently revised on May 17, 2021.

Q. PLEASE IDENTIFY CUPAWW EXHIBIT SAM-1.

A. CUPAWW Exhibit SAM-1 is a copy of our Accounting Report summarizing the results of the accounting services performed for CUPA's wastewater divisions.

Q. WAS THE ACCOUNTING REPORT PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. Yes.

Q. PLEASE EXPLAIN HOW YOUR TESTIMONY AND THE ACCOUNTING REPORT ARE ORGANIZED.

A. My testimony is organized as follows:

I. Introduction and Qualifications

II. Overview of Testimony and Exhibit

III. Cost of Service Methodology

A. Wastewater

IV. Consolidated Cost of Service and Rate Design

A. Wastewater Utility

The Accounting Report is divided into two sections. The first section of the report is the accountant's letter which describes that the Accounting Report is a special purpose report for submission to the Pennsylvania Public Utility Commission and is restricted to that purpose only. This letter is incorporated by reference on all the pages of the Accounting Report.

The second section of the report (pages 2 - 13) presents the consolidated cost of service analysis and resulting rates and charges for the Company's wastewater divisions. In addition, a comparison of the Company's present wastewater rates for each service territory and the rates proposed in this case is shown.

COST OF SERVICE METHODOLOGY

Q. MR. MILLER, WOULD YOU PLEASE DESCRIBE THE GENERAL PURPOSE OF A COST OF SERVICE STUDY?

A. A cost of service study is a detailed analysis of the cost drivers that influence the provision of service to a utility's customers. The goal of the study is to determine the appropriate level of cost recovery allocable to each customer class. The cost of service study is normally done in conjunction with and leads to the creation of a rate design that recovers costs from the appropriate customer class as closely as possible to the allocated cost of service.

Q. ARE THERE DIFFERENT ACCEPTED METHODOLOGIES OF CONDUCTING A COST OF SERVICE STUDY THAT ARE EMPLOYED IN PRACTICE AND IF SO, WHICH DID YOU USE FOR THIS CASE?

WASTEWATER

A. Yes, there are different accepted methodologies. Some of these methodologies include the procedures identified by the Water Environment Federation in its *Manual of Practice No. 27 Financing and Charges for Wastewater Systems* as well as variations of the procedures explained in the American Water Works Association ("AWWA") *Principles of Water Rates, Fees and Charges* (the "M1 Manual"). For this particular case, however, we have employed a more streamlined approach based on the U.S. Environmental Protection Agency's ("EPA") User Charge System. The User Charge System was originally developed and required by EPA for wastewater projects receiving federal grant funding during the construction grants program of the 1980's.

Similar to the other methodologies, the User Charge System begins with the allocation of the utility's investment in plant and its anticipated costs to the functional cost components. These include Treatment and Disposal, Collection System and Billing and Collecting. Treatment and Disposal costs relate to the treatment of the wastewater influent into the system and the related byproducts or sludge left over after the treatment process. These costs generally vary based on the volume of flow into the plant and are therefore typically recovered via a volumetric rate. Collection system costs relate to the maintenance and operation of the interceptor and collector mains and lift stations that transport the wastewater to the treatment plant. These costs can vary both by the volume of flow and the number and size of customers connected to the system. For that reason, these costs are sometimes recovered through both a volumetric flow charge and a fixed monthly charge. Costs associated with Billing and Collecting naturally relate to the billing and collecting function of the utility and are recovered through a fixed monthly charge.

Q. WHAT IS THE SOURCE OF THE DATA USED TO PREPARE YOUR REPORT?

A. The utility specific data used for the preparation of the cost of service study was provided to me by CUPA's Financial Analyst II and witness Mr. David Clark and Financial Planning & Analysis Manager and witness Mr. Perry Brown. The data comprises information from the Company's billing and accounting systems as well as other records maintained by CUPA and include historical billing data, plant and investment values, operating statistics and other similar information for the control period used which was the twelve months ended December 31, 2020. In addition, Mr. Clark and Mr. Brown provided to me the pro forma revenue requirements for which CUPA is seeking approval for the consolidated

wastewater territories as well as the pro forma customer count based on the Company's forward-looking test year the twelve months ending December 31, 2022.

CONSOLIDATED COST OF SERVICE AND RATE DESIGN

Wastewater Utility

Q. MR. MILLER, WOULD YOU PLEASE EXPLAIN MORE FULLY THE DETAILS OF THE REPORT AND YOUR COST OF SERVICE AND RATE DESIGN CALCULATIONS FOR THE CONSOLIDATED WASTEWATER TERRITORIES?

A. The second section of the report, beginning on page 2 contains the consolidated cost of service analysis for the CUPA wastewater territories. Each of the revenue requirements are first allocated to the functional cost components. The allocated revenue requirements are then divided by the appropriate billing determinants to develop proposed rates and charges that are designed to recover the Company's cost of service.

Page 2 shows the Company's usage characteristics by summarizing control period billings, including monthly base facility charges, flow charges, unmetered charges and availability fees. All of CUPA's wastewater customers are billed a flat monthly rate depending on their customer classification. In addition, Tamiment customers are billed a rate per 1,000 gallons of flow. After taking into account billing adjustments applied during the control period, the calculated revenues compared to the actual control period revenues results in a variance of 0.19%. This small variance indicates that the analysis and the underlying billing determinants are statistically valid for rate-making purposes.

Page 3 presents the calculation of the pro forma annual bills and flow. Control period bills were normalized to reflect a conversion to monthly billing for all customers. In addition, slight adjustments were made to the number of bills to reflect the anticipated number of active customer accounts on a going forward basis and to eliminate billing inconsistencies and rounding errors. Finally, control period flow was normalized to reflect management's expected decline of 1.34% per year. This adjustment is discussed in more detail in the testimony of Mr. Clark and Mr. Brown. Next, the normalized annual bills are multiplied by the appropriate equivalency factor to arrive at pro forma equivalent connections. The equivalency factors used are based on the equivalent maximum daily flow per 25 Pa. Code §73.17.

The next several pages of the report detail the allocation of the Company's investment in plant and the pro forma costs to the functional cost components and ultimately to the customer classes. On pages 4 to 6 of the report, the Company's pro forma rate base as of December 31, 2022 has been allocated to the three functional cost components that I described earlier in my testimony. The allocations are based upon the design of the individual plant components and reflect that item's function within the overall operation of the utility.

Pages 7 and 8 of the report present the allocation of the pro forma annual operation and maintenance expenses to each of the functional cost components. Similar to the rate base, the allocation factors for operation and maintenance expense reflect that particular item's impact on the various cost centers of the Company.

Page 9 presents the summarized allocation of the consolidated wastewater service revenue requirements to the three functional cost components. Interest on debt, income taxes, amortization of prior acquisition adjustment and return are all allocated based on the allocation of rate base described on pages 4 to 6. Depreciation expense is allocated based on the allocation of net plant in service and taxes other than income are allocated based upon gross plant in service. Amortization of CIAC is allocated based on the allocation of net contributions in aid of construction. The $3,664,079 of total cost of service to be recovered through rates is allocated $1,968,187 to Treatment and Disposal, $1,473,278 to Collection System and $222,614 to Billing and Collecting.

Page 10 details the calculation of the proposed rates and charges for consolidated wastewater service. To accomplish this, the individual components of allocated cost of service are divided by the appropriate billing determinant to arrive at a unit cost of service. Billing and Collecting costs are divided by the number of normalized annual bills expected to be rendered in the forward-looking test year to arrive at a cost per bill of $4.4734. Because CUPA operates on both a flat monthly bill basis and a combined base and flow for Tamiment, the Treatment and Disposal costs were first allocated to Tamiment and all other customers based on their respective percentage of equivalent meters to the total system. Tamiment Treatment and Disposal costs were then divided by expected flow to derive a rate of $15.5309 per 1,000 gallons while the Treatment and Disposal costs for all other customers were divided by the associated number of equivalent meters for a charge of $42.1941. Collection System costs are divided by equivalent annual meters for both customer groups to arrive at a rate per equivalent bill of $31.5856. After applying the appropriate equivalency factors, monthly flat rate charges are $78.25 for household, residential and commercial customers and $926.70 for schools.

Q. HOW WAS THE PROPOSED AVAILABILITY FEE FOR THE PENN ESTATES SERVICE TERRITORY CALCULATED?

A. Consistent with the calculations in CUPA's last cost of service study and rate case, we used 0.25 as the equivalency factor for the availability fee on page 3 of the report which results in 94 equivalent availability fee billing units that were incorporated throughout the cost of service allocations. After the completion of the cost of service allocations, we used the same 0.25 equivalency factor multiplied by the allocated Treatment and Collection costs per equivalent unit of $47.1165 as shown on page 10. We then added the monthly billing cost of $4.4734 to arrive at a new monthly availability fee of $16.25.

Page 11 of the report shows the estimated revenue to be generated from the proposed rates and charges when applied to the anticipated billing determinants and compares this calculated figure to the net cost of service to be collected through rates and charges. As can be seen, the proposed rates and charges adequately recover the cost of service within a 0.32% variance.

Page 12 presents a comparison of the estimated revenue to be generated by customer class with the control period revenues. The overall average system increase in revenue is approximately 37.34%.

Page 13 of the report shows a comparison of the present individual territory rates for wastewater service with the proposed consolidated wastewater service rates.

Q. MR. MILLER DOES THAT CONCLUDE THE EXPLANATION OF YOUR CALCULATIONS OF ALLOCATED COST OF SERVICE AND RATE DESIGN FOR CUPA CONSOLIDATED WASTEWATER SERVICE?

A. Yes, it does.

Q. MR. MILLER IS IT YOUR UNDERSTANDING THAT CUPA WOULD LIKE TO CONTINUE CONSOLIDATED WASTEWATER RATES AND FOR ITS SERVICE TERRITORIES IN PENNSYLVANIA INCLUDING THE ADDITION OF TAMIMENT?

A. Yes. That is my understanding.

Q. DO YOU HAVE AN OPINION REGARDING THE IMPLEMENTATION OF CONSOLIDATED RATES?

A. Yes. This practice is not new and was supported by the Commission in CUPA's prior rate case. In my opinion, to a reasonable degree of accounting certainty, under the conditions within which the Company operates, consolidated rates appear reasonable for the individual service territories. On their own, each service territory is relatively small and lacks the economies of scale that could ultimately result in savings to the customers. Consolidating the rates mirrors the overall ownership and operation of the different units and more closely matches the allocation of costs to the service areas.

Q. IS IT YOUR OPINION THAT THE CONSOLIDATED WASTEWATER RATES PROPOSED IN YOUR ACCOUNTING REPORT ARE FAIR, JUST, NON-DISCRIMINATORY AND REASONABLE AND NECESSARY TO MEET THE PROJECTED REVENUE REQUIREMENTS OF THE UTILITY?

A. Yes, it is my opinion to a reasonable degree of accounting certainty that the consolidated wastewater rates proposed in my accounting report, CUPAWW EX SAM-1, are fair, just, non-discriminatory and reasonable and necessary to meet the projected revenue requirements of the utility.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY IN THIS CAUSE?

A. This concludes my direct testimony at this time.

CUPA WW Exhibit SAM-1

CUPAWW EX SAM-1 (Revised)

Petitioner's Attachment SAM-1 (Revised)

Docket Number
R-2021-3025207

Community Utilities of Pennsylvania, Inc.

Accounting Report On
Wastewater Utility
Cost of Service Study and Rate Design

May 17, 2021

bakertilly

Indianapolis, Indiana

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May 17, 2021

ACCOUNTANTS' SPECIAL PURPOSE REPORT

Community Utilities of Pennsylvania, Inc.
2335 Sanders Road
Northbrook, IL 60062

RE: Wastewater Utility (the "Utility")
Cost of Service Study and Rate Design

In connection with the proposed adjustment in the Utility's schedules of Sewer rates and charges, we have, at your request, compiled this special purpose report for submission to the Pennsylvania Public Utility Commission.

This special purpose cost of service study report has been prepared for the purpose of requesting approval of new schedules of Sewer rates and charges from the Pennsylvania Public Utility Commission and should not be used for any other purpose.

Further, the pro forma financial information in this report which has not been compiled, reviewed or audited by us, is based upon unaudited financial information for the twelve months ending December 31, 2022, which was compiled by management as well as assumptions provided by management and their consultants or obtained from other sources. This pro forma financial information is prepared for the purpose of showing the cost of providing Sewer service to the various customer classes of the Utility as well as for designing a rate structure to recover these costs from the Utility's customer classes. The actual results achieved may vary from the pro forma information and the variations may be material. We have no responsibility to update this report for events and circumstances occurring after the date of this report.

Baker Tilly Municipal Advisors, LLC

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COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

SUMMARY OF CONTROL PERIOD CONSUMER STUDY FOR SEWAGE SERVICES
(For the 12 Months Ended December 31, 2020)

	Number of Bills	Billed Consumption (Gallons)	Rate (1)		Revenues
Utilities Inc. of Pennsylvania:					
Flat Rate:					
Unmetered - Household	18,414		$55.39	/month	$1,019,951
Unmetered - School	8		$3.57	/quarter/pupil (2)	16,451
Penn Estates:					
Flat Rate:					
Unmetered - Residential	20,269		$55.39	/month	$1,122,700
Unmetered - Commercial	74		$55.39	/month	4,099
Unmetered (Availability Fee)	600		$13.12	/month	7,872
Tamiment:					
Base and Flow:					
Base Charge - Residential 5/8" meter	6,597		$24.48	/month	$161,495
Base Charge - Commercial 5/8" meter	36		$163.24	/month	5,877
Base Charge - Commercial 6" meter	24		$164.24	/month	3,942
Unmetered (Availability Fee)	3,936		$7.63	/month	30,032
All Flow		22,421,633	$13.73	/1,000 gal.	$307,849
Billing Adjustments From Billing System		(1,356,920)			(44,309)
Totals	49,958	21,064,713			$2,635,959
Control Period (Calendar Year 2020)					$2,631,086
Variance					$4,873
Percent Variance					0.19%

(1) Current rates effective January 1, 2020 per Supplement No. 6 Tariff Wastewater-Pa. P.U.C. No. 1.
(2) There were two schools with a combined total of 1,152 pupils for the 2020 control period.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

CALCULATION OF PRO FORMA ANNUAL BIILS AND FLOWS
(Based upon control period service charge billings)

Meter Size	Control Period Bills	Adjustment (1)	Normalized Annual Bills	Average Connections	Equivalency Factor (2)	Equivalent Meters and Services
Utilities Inc. Pennsylvania:						
Unmetered - Household	18,414	(36)	18,378	1,532	1.00	1,532
Unmetered - School	24	-	24	2	12.50	25
Penn Estates:						
Unmetered - Residential	20,269	(59)	20,210	1,684	1.00	1,684
Unmetered - Commercial	74	(1)	73	6	1.00	6
Unmetered (Availability Fee)	600	(12)	588	49	0.25	12
Tamiment:						
Base Charge - Residential	6,597	(78)	6,519	543	1.00	543
Base Charge - Commercial	60	(24)	36	3	1.00	3
Unmetered (Availability Fee)	3,936	-	3,936	328	0.25	82
Totals	49,974	(210)	49,764	4,147		3,887

(1) Per Utility management, no pro forma growth has been assumed. Control period bills have been adjusted to reflect anticipated levels going forward.

(2) Equivalent estimated maximum daily flow per 25 Pa. Code §73.17.

	Test Year Net Flow	Adjustment (3)	Normalized Flow
Tamiment	21,064,713	(585,599)	20,479,114

(3) Per Utility management, a 1.39% decline in flow has been assumed per year.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

ALLOCATION OF RATE BASE TO FUNCTIONAL COST COMPONENTS
See explanation of references, page 6.

	Pro Forma Rate Base 12/31/22	Allocation			Percentage Allocations			
		Treatment and Disposal	Collection System	Billing and Collecting	Treatment and Disposal	Collection System	Billing and Collecting	Ref.
Collection:								
Structures and improvements	$1,562,805		$1,562,805			100.00%		(1)
Land and land rights	19,309		19,309			100.00%		(1)
Collection sewers - force	523,006		523,006			100.00%		(1)
Collection sewers - gravity	7,626,910		7,626,910			100.00%		(1)
Manholes	149,183		149,183			100.00%		(1)
Special collection structures	60,777		60,777			100.00%		(1)
Services to customers	327,536			$327,536			100%	(2)
Flow measuring devices	154,125			154,125			100%	(2)
Other plant and Miscellaneous equipment	1,450		1,450			100%		(1)
System Pumping:								
Structures and improvements	1,416,763	$708,381	708,382		50.00%	50.00%		(3)
Receiving wells	170,222	85,111	85,111		50.00%	50.00%		(3)
Pumping equipment	497,631	248,815	248,816		50.00%	50.00%		(3)
Other plant and Miscellaneous equipment	27,186	13,593	13,593		50.00%	50.00%		(3)
Treatment and Disposal:								
Structures and improvements	2,617,208	2,617,208			100.00%			(4)
Power generation equipment	394,093	394,093			100.00%			(4)
Flow measure install	87,875	87,875			100.00%			(4)
Treatment and disposal equipment	6,898,509	6,898,509			100.00%			(4)
Plant sewers	124,086	124,086			100.00%			(4)
Outfall sewer lines	124,707	124,707			100.00%			(4)
Other plant and Miscellaneous equipment	15,419	15,419			100.00%			(4)
Reclaimed Water Distribution:								
Reuse Transmission and Distribution System	3,251		3,251			100.00%		(1)
General Plant:								
Organization	295,278	146,842	142,206	6,230	49.73%	48.16%	2.11%	(5)
Land and land rights	52,692	26,204	25,376	1,112	49.73%	48.16%	2.11%	(5)
Structures and improvements	631,116	313,854	303,945	13,317	49.73%	48.16%	2.11%	(5)
Office furniture and equipment	64,266	31,959	30,951	1,356	49.73%	48.16%	2.11%	(5)
Transportation equipment	271,716	135,125	130,858	5,733	49.73%	48.16%	2.11%	(5)
Computer equipment	237,238	117,978	114,254	5,006	49.73%	48.16%	2.11%	(5)
Stores equipment	10,456	5,199	5,036	221	49.73%	48.16%	2.11%	(5)
Tools, shop and garage equipment	252,321	125,479	121,518	5,324	49.73%	48.16%	2.11%	(5)
Laboratory equipment	42,066	42,066			100.00%			(4)
Power operated equipment	49,795	24,763	23,981	1,051	49.73%	48.16%	2.11%	(5)
Communication equipment	292,601	145,510	140,917	6,174	49.73%	48.16%	2.11%	(5)
Miscellaneous equipment	20,961	10,424	10,095	442	49.73%	48.16%	2.11%	(5)
Other tangible plant	497,699	247,506	239,692	10,501	49.73%	48.16%	2.11%	(5)
Gross Plant in Service	25,520,256	12,690,706	12,291,422	538,128	49.73%	48.16%	2.11%	
Accumulated Depreciation	(10,487,192)	(5,346,531)	(4,920,150)	(220,511)	49.73%	48.16%	2.11%	(6)
Net Plant in Service	15,033,064	7,344,175	7,371,272	317,617	48.86%	49.03%	2.11%	
Cash Working Capital	226,060	110,453	110,837	4,770	48.86%	49.03%	2.11%	(7)
Net Contributions in Aid of Construction	(1,775,060)	(885,932)	(889,128)		49.91%	50.09%		(8)
Accumulated Deferred Income Taxes	(773,694)	(378,027)	(379,342)	(16,325)	48.86%	49.03%	2.11%	(7)
Net Plant Acquisition Adjustment	(1,057,608)	(516,747)	(518,545)	(22,316)	48.86%	49.03%	2.11%	(7)
Customer Deposits	(1,707)	(834)	(837)	(36)	48.86%	49.03%	2.11%	(7)
Net Deferred Charges	66,921	32,698	32,811	1,412	48.86%	49.03%	2.11%	(7)
Total Rate Base	$11,717,976	$5,705,786	$5,727,068	$285,122	48.70%	48.87%	2.43%	

(Continued on next page)

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

(Cont'd)

ALLOCATION OF RATE BASE TO FUNCTIONAL COST COMPONENTS
See explanation of references, page 6.

	Pro Forma Accumulated Depreciation 12/31/22	Allocation Treatment and Disposal	Allocation Collection System	Allocation Billing and Collecting	Percentage Allocations Treatment and Disposal	Percentage Allocations Collection System	Percentage Allocations Billing and Collecting	Ref.
Collection:								
Structures and improvements	($60,229)		($60,229)			100.00%		(1)
Collection sewers - force	(188,998)		(188,998)			100.00%		(1)
Collection sewers - gravity	(3,740,108)		(3,740,108)			100.00%		(1)
Manholes	(7,169)		(7,169)			100.00%		(1)
Special collection structures	(1,823)		(1,823)			100.00%		(1)
Services to customers	(161,649)			($161,649)			100%	(2)
Flow measuring devices	(12,964)			(12,964)			100%	(2)
Flow measuring Installations	(14,697)			(14,697)			100%	(2)
Other plant and Miscellaneous equipment	(511)		(511)			100%		(1)
System Pumping:								
Structures and improvements	(419,829)	($209,914)	(209,915)		50.00%	50.00%		(3)
Receiving wells	(39,198)	(19,599)	(19,599)		50.00%	50.00%		(3)
Pumping equipment	13,985	6,992	6,993		50.00%	50.00%		(3)
Other plant and Miscellaneous equipment	(2,991)	(1,495)	(1,496)		50.00%	50.00%		(3)
Treatment and Disposal:								
Structures and improvements	(1,043,175)	(1,043,175)			100.00%			(4)
Power generation equipment	(97,529)	(97,529)			100.00%			(4)
Treatment and disposal equipment	(3,172,099)	(3,172,099)			100.00%			(4)
Plant sewers	14,496	14,496			100.00%			(4)
Flow measure install	(2,636)	(2,636)			100.00%			(4)
Outfall sewer lines	(57,852)	(57,852)			100.00%			(4)
Other plant and Miscellaneous equipment	(3,423)	(3,423)			100.00%			(4)
Reclaimed Water Distribution:								
Reuse Transmission and Distribution System	(163)		(163)			100.00%		(1)
General Plant:								
Organization	(134,013)	(68,320)	(62,879)	(2,814)	50.98%	46.92%	2.10%	(5)
Structures and improvements	(247,966)	(126,413)	(116,346)	(5,207)	50.98%	46.92%	2.10%	(5)
Office furniture and equipment	(524,349)	(267,313)	(246,025)	(11,011)	50.98%	46.92%	2.10%	(5)
Transportation equipment	(207,120)	(105,589)	(97,181)	(4,350)	50.98%	46.92%	2.10%	(5)
Computer equipment	(109,591)	(55,870)	(51,420)	(2,301)	50.98%	46.92%	2.10%	(5)
Stores equipment	(441)	(225)	(207)	(9)	50.98%	46.92%	2.10%	(5)
Tools, shop and garage equipment	(152,187)	(77,585)	(71,406)	(3,196)	50.98%	46.92%	2.10%	(5)
Laboratory equipment	(2,844)	(2,844)			100.00%			(4)
Power operated equipment	(17,142)	(8,739)	(8,043)	(360)	50.98%	46.92%	2.10%	(5)
Communication equipment	(58,407)	(29,775)	(27,405)	(1,227)	50.98%	46.92%	2.10%	(5)
Miscellaneous equipment	(878)	(448)	(412)	(18)	50.98%	46.92%	2.10%	(5)
Other tangible plant	(33,692)	(17,176)	(15,808)	(708)	50.98%	46.92%	2.10%	(5)
Accumulated Depreciation	($10,487,192)	($5,346,531)	($4,920,150)	($220,511)	50.98%	46.92%	2.10%	

(Continued on next page)

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

(Cont'd)

ALLOCATION OF RATE BASE TO FUNCTIONAL COST COMPONENTS
Base-Extra Capacity Method

(1) Allocated 100% to collection system.

(2) Allocated 100% to billing and collecting.

(3) Allocated 50% to collection system and 50% to treatment and disposal.

(4) Allocated 100% to treatment and disposal.

(5) Allocated pro rata to all other allocable utility plant.

(6) Accumulated depreciation allocated by function, page 5.

(7) Allocated pro rata to net utility plant.

(8) Allocated pro rata to net Treatment and Disposal investment and net Collection System investment.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

ALLOCATION OF PRO FORMA OPERATION AND MAINTENANCE EXPENSES
TO FUNCTIONAL COST COMPONENTS
See explanation of References, page 8.

			Allocation				Percentage Allocation				
	Pro Forma Expense		Treatment and Disposal	Collection System	Billing and Collecting	Administrative	Treatment and Disposal	Collection System	Billing and Collecting	Administrative	Ref.
Maintenance Expenses:											
Salaries and wages	$351,803	x	$175,585	$176,218			49.91%	50.09%			(1)
Purchased power	125,637	x	62,818	62,819			50.00%	50.00%			(2)
Maintenance and repair	134,556	x	67,157	67,399			49.91%	50.09%			(1)
Sludge Hauling	226,788	x	226,788				100.00%				(3)
Maintenance testing	50,482	x	25,196	25,286			49.91%	50.09%			(1)
Chemicals	129,205	x	129,205				100.00%				(3)
Transportation	26,736	x	13,344	13,392			49.91%	50.09%			(1)
Operating expense charged to plant	(46,517)	x	(15,839)	(15,900)		($14,778)	34.05%	34.18%	0.00%	31.77%	(4)
Outside services - other	17,908	x				17,908				100.00%	(5)
General Expenses:											
Salaries and Wages	163,822	x			-	163,822			0.00%	100.00%	(6)
Billing and customer service expense	11,849	x			11,849				100.00%		(7)
Office supplies and other expenses	13,013	x	6,358	6,380	275		48.86%	49.03%	2.11%		(8)
Regulatory commission expense	43,464					43,464				100.00%	(5)
Pension and other benefits	132,598		45,150	45,322		42,126	34.05%	34.18%	0.00%	31.77%	(4)
Insurance	60,070		29,351	29,452	1,267		48.86%	49.03%	2.11%		(8)
Office utilities	28,652				14,326	14,326			50.00%	50.00%	(9)
Miscellaneous	14,821					14,821				100.00%	(5)
Corporate Allocation	320,828				80,207	240,621			25.00%	75.00%	(10)
Sub-totals	1,805,715		765,113	410,368	107,924	522,310	42.37%	22.73%	5.98%	28.92%	
Reallocate administrative pro rata	-		311,380	167,008	43,922	(522,310)					
Total operation and maintenance disbursements	$1,805,715		$1,076,493	$577,376	$151,846	$ -	59.62%	31.97%	8.41%	0.00%	

(Continued on next page)

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

(Cont'd)

ALLOCATION OF PRO FORMA OPERATION AND MAINTENANCE EXPENSES TO FUNCTIONAL COST COMPONENTS

(1) Allocated pro rata based on Treatment and Disposal plant and Collection System plant.

(2) Allocated 50% to Treatment and Disposal and 50% to Collection System.

(3) Allocated 100% to Treatment and Disposal.

(4) Allocated pro rata based upon total payroll.

(5) Allocated 100% to Administrative.

(6) Direct allocation by function.

(7) Allocated 100% to Billing and Collecting.

(8) Allocated pro rata based upon net utility plant.

(9) Allocated 50% to Billing and Collecting and 50% to Administrative.

(10) Allocated 25% to Billing and Collecting and 75% to Administrative.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

PRO FROMA ANNUAL REVENUE REQUIREMENTS
ALLOCATED TO FUNCIONAL COST COMPONENTS

	Pro Forma 12/31/2022	Allocation			Ref
		Treatment and Disposal	Collection System	Billing and Collecting	
Revenue Requirements:					
Net operation and maintenance expense	$1,805,715	$1,076,493	$577,376	$151,846	(1)
Interest on debt	351,748	171,302	171,899	8,547	(2)
Depreciation	665,056	324,946	326,077	14,033	(3)
Taxes other than income	45,084	22,028	22,105	951	(4)
Income taxes - federal	174,497	84,980	85,277	4,240	(2)
Income taxes - state	92,224	44,913	45,070	2,241	(2)
Amortization of PAA	(58,573)	(28,525)	(28,625)	(1,423)	(2)
Amortization of CIAC	(86,762)	(43,303)	(43,459)	-	(5)
Return on rate base	656,440	319,686	320,802	15,952	(2)
Total Cost of Service	3,645,429	1,972,520	1,476,522	196,387	
Less: Miscellaneous Revenues	(8,008)	(4,333)	(3,244)	(431)	(6)
Plus: Uncollectible Accounts	26,658			26,658	(7)
Total Cost of Service to be Recovered Through Rates and Charges	$3,664,079	$1,968,187	$1,473,278	$222,614	

(1) As calculated on "Allocation of Pro Forma Operation and Maintenance Expenses to Functional Cost Components", pages 7 - 8.
(2) Allocated based on rate base. See page 4.
(3) Allocated based on net plant in service. See page 4.
(4) Allocated based on gross plant. See page 4.
(5) Allocated based on Net Contributions in Aid of Construction. See page 4.
(6) Allocated pro rata to total cost of service.
(7) Allocated 100% to Billing and Collecting.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

CALCULATION OF PROPOSED MONTHLY FIXED CHARGE

Meter Size	5/8 inch Equivalency Factor	Collection Cost Per Equiv. Unit (1)	Treatment Cost Per Unit (2)	Meter Cost Per Unit	Billing Cost Per Bill (3)	Total	Rounded (Use)
Unmetered - Household	1.00	$31.5856	$42.1941	$73.7797	$4.4734	$78.2531	$78.25
Unmetered - School	12.50	31.5856	42.1941	922.2463	4.4734	926.7197	926.70
Unmetered - Residential	1.00	31.5856	42.1941	73.7797	4.4734	78.2531	78.25
Unmetered - Commercial	1.00	31.5856	42.1941	73.7797	4.4734	78.2531	78.25
Unmetered - Availability fee	0.25	31.5856	15.5309	11.7791	4.4734	16.2525	16.25
Base Charge - Residential	1.00	31.5856	0.0000	31.5856	4.4734	36.0590	36.05
Base Charge - Commercial	1.00	31.5856	0.0000	31.5856	4.4734	36.0590	36.05
Tamiment Flow			15.5309			15.5309	15.55

(1) Calculated as follows:	Collection System
Total cost of service to be recovered through rates and charges (page 9)	$1,473,278
Divided by number of equivalent meters (page 3)	3,887
Divided by 12 months	12
Monthly charge per equivalent meter	$31.5856

(2) Calculated as follows:	Treatment and Disposal
Tamiment:	
Total cost of service to be recovered through rates and charges (page 9)	$1,968,187
Times percent of allocable equivalent meters	16.16%
Divided by flow (in 1,000s) (page 3)	20,479
Charge per 1,000 gallons	$15.5309

All Others:	Treatment and Disposal
Total cost of service to be recovered through rates and charges (page 9)	$1,968,187
Times percent of allocable equivalent meters	83.84%
Divided by number of associated equivalent meters (page 3)	3,259
Divided by 12 months	12
Monthly charge per equivalent meter	$42.1941

(3) Calculated as follows:	Billing and Collecting
Total cost of service to be recovered through rates and charges (page 9)	$222,614
Divided by number of bills annually (page 3)	49,764
Billing cost per bill	$4.4734

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

PRO FORMA ANNUAL OPERATING REVENUE AT ADJUSTED RATES AND CHARGES BASED UPON ALLOCATED COST OF SERVICE

	Percent of Use	Pro Forma Consumption	Number of Bills	Flat Rate	Pro Forma Revenue Under Adjusted Rates
Utilities Inc. of Pennsylvania:					
Unmetered - Household			18,378	$78.25	$1,438,079
Unmetered - School			24	926.70	22,241
Penn Estates:					
Unmetered - Residential			20,210	78.25	1,581,433
Unmetered - Commercial			73	78.25	5,712
Unmetered - Availability fee			588	16.25	9,555
Tamiment:					
Base Charge - Residential			6,519	36.05	235,010
Base Charge - Commercial			36	36.05	1,298
Unmetered - Availability fee			3,936	16.25	63,960
All Flow	100%	20,479,114		15.55	318,450
Total		20,479,114	49,764		$3,675,738
Control					$3,664,079
Variance					$11,659
Percent Variance					0.32%

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

COMPARISON OF ALLOCATED COST OF SERVICE WITH REVENUE UNDER EXISTING AND ADJUSTED RATES

	Cost of Service (2)	Control Period Revenue Under Existing Rates (1)	Increase/(Decrease) %	Increase/(Decrease) Amount
Utilities Inc. of Pennsylvania:				
Unmetered - Household	$1,438,079	$1,019,951	40.99%	$418,128
Unmetered - School	22,241	16,451	35.20%	5,790
Penn Estates:				
Unmetered - Residential	1,581,433	1,122,700	40.86%	458,733
Unmetered - Commercial	5,712	4,099	39.35%	1,613
Unmetered - Availability fee	9,555	7,872	21.38%	1,683
Tamiment:				
Base Charge - Residential	235,010	161,495	45.52%	73,515
Base Charge - Commercial	1,298	5,877	-77.91%	(4,579)
Unmetered - Availability fee	63,960	30,032	112.97%	33,928
Flow	318,450	307,849	3.44%	10,601
Totals	$3,675,738	$2,676,326	37.34%	$999,412

(1) See pages 2.
(2) See page 11.

(See Accountants' Special Purpose Report)

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.
CONSOLIDATED WASTEWATER SERVICES

SCHEDULE OF PRESENT AND PROPOSED RATES AND CHARGES

	Utilities Inc. Pennsylvania (1)	Penn Estate Present (1)	Tamiment (2)	Proposed
Flat Rate				
Flat rate charged monthly - Residential		$55.39		$78.25
Flat rate charged monthly - Commercial		55.39		78.25
Flat rate charged monthly	$55.39			78.25
Base Charge				
Residential			$24.48	36.05
Commercial			163.24	36.05
Availability fee		13.12	7.63	16.25
School				
Rate charged per quarter per pupil based on pupils for the preceding 3 months	3.57			4.83
Usage Charge (per 1,000 gallons)				
All Flow			13.73	15.55

(1) Current rates effective January 1, 2020 per Supplement No. 6 Tariff Wastewater-Pa. P.U.C. No. 1.
(2) Current rates effective January 4, 2012 per Supplement No. 5 Tariff Wastewater-PA P.U.C. No. 1.

(See Accountants' Special Purpose Report)

CUPA WW Exhibit SAM-2

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Scott A. Miller, CPA

Scott A. Miller, partner and a leader in the public sector practice group has nearly twenty-six years of experience in the municipal advisor and utility rate industries.

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Education
Bachelor of Science in Accounting
Kelley School of Business
Indiana University – Bloomington

CPA license to practice in Indiana

Registered municipal advisor with the Securities and Exchange Commission

He has extensive experience with financial studies for municipally owned water, electric, gas, steam and sewage utilities, not-for-profit and investor-owned water and sewer corporations, regional water and sewer districts and conservancy districts. These studies often involve determining utility revenue and rate requirements, cost-of-service studies, rate design and the financial planning associated with the acquisition of capital.

Specific experience

- Analyzes revenue requirements and performs cost of service studies and rate design for water, wastewater, electric, gas and steam utilities
- Serves as an expert witness before regulatory bodies in utility rate proceedings
- Provides assistance with bond and note financings through the capital market, State Revolving Fund, USDA Rural Development and other sources
- Provides financial reporting, strategic planning and rate management for utilities
- Provides asset management planning for utilities
- Prepares system development and capacity fee studies
- Assists with wholesale rate development and intergovernmental contract negotiations
- Provides valuation services related to utility rate base
- Advises on acquisitions, dispositions, mergers, privatization and re-municipalization of utilities
- Authors various articles related to the utility industry

Industry involvement

- American Institute of Certified Public Accountants (AICPA)
- Indiana CPA Society (INCPAS)
- American Water Works Association (AWWA)
- Chair, Water Utility Council / Indiana Section AWWA
- Accelerate Indiana Municipalities (AIM)
- Indiana Water Environment Association (IWEA)
- Indiana Rural Water Association (IRWA)
- Alliance of Indiana Rural Water (AIRW)
- Former member AIRW Advisory Council

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Thought leadership

- "Growing with the Auto Industry," AWWA, 2020 (co-author)
- "Public Works and Utilities," AIM 2020 (co-author)
- "Maximize Your Financial Advisor Relationship," Baker Tilly Utility University, 2019 (co-author)
- "Leveraging Your Municipal Utility for Community Benefit," AWWA, IWEA and AIM, 2019 (co-author)
- "Municipal Storm Water Funding -an Overview," State of Indiana Storm Water Management Task Force, 2019
- "Legislative Updates: What Utilities Need to Know," IRWA, 2019 (co-author)
- "Water Conservation and Lost Water and Their Impact on Utility Revenues," AWWA, IWEA and AIRW, 2019
- "Utilities and P3s – How to Attract Capital and Manage a Strong Program," AWWA, 2018 (co-author)
- "Succession Planning for Indiana Utilities," AWWA, IRWA and IWEA, 2017
- "Revenue Bond Financing," Indiana Public Finance Leadership Summit, 2017
- "Utilities and P3s – How to Attract Capital and Manage a Strong Program," AIM, 2017 (co-author)
- "ARRA Build America Bonds – Time to Refinance? and Use of TIF's," ACEC, 2016
- "Utility Rate Comparisons and Current Trends in Project Financing," AWWA, 2015
- "National Infrastructure Bank – A New Line of Credit?" AWWA, 2014
- "Encouraging Water Conservation through Effective Pricing," AWWA and AIRW, 2012
- "Connect Four: Economic Development Strategies for Lining Up Municipalities, Water, Energy & Money," AIM, 2011
- "Waterworks Rate Setting/Project Funding," AWWA, 2011 (co-author)
- "System Development Charges and Capital Planning," AIRW 2010 and IRSDA 2011
- "Ensuring Adequate Revenues to Maintain Utilities," AIM, 2010 (co-author)
- "The Benefits of Financial Planning," AWWA, 2009
- "Growing Pains: Utility Growth Issues," AIRW, 2008
- "Alternative Revenue Sources: Bridging A Funding Gap," AIM, 2008 (co-author)
- "Sales Tax and Other Taxability Issues – An Overview," AIRW, 2007 (co-author)
- "The Right Stuff: Municipal Utilities as a Launching Pad for Growth," AIM, 2007
- "How do you Rate? Utility Rate Studies," AIM, 2004 (co-author)
- "Rate Review Indicators and Fee Types," IASC, 2004

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Continuing professional education (external)

- Financial Management: Cost of Service Rate-Making (AWWA 1998)
- Intermediate Utility Cost of Service & Retail Rate Design (APPA 2010)
- Advanced Utility Cost of Service & Retail Rate Design (APPA 2010)
- Independence 2019 (Becker CPA 2019)
- Series 54 Pilot Exam (MSRB 2019)
- Pricing Municipal Bonds Through a Competitive Sale Process (MSRB 2019)
- Pricing Municipal Bonds Through a Negotiated Sale Process (MSRB 2019)
- Municipal Bond Math Basics (MSRB 2019)
- Advertising by Municipal Advisors: MSRB Rule G-40 (MSRB 2019)
- Preventing Workplace Harassment for Managers (emtrain 2019)
- Fostering a Diverse and Inclusive Workplace (emtrain 2109)
- Managing Unconscious Bias (emtrain 2019)
- Supervisory and Compliance Obligations of Municipal Advisors: MSRB Rule G-44 (MSRB 2018)
- Due Diligence: Primary Offering Disclosure Responsibilities (MSRB 2018)
- The Decision to Borrow: Roles and Responsibilities of Market Participants in Fixed Rate Primary Market Offerings (MSRB 2018)
- Revenue Recognition (Becker CPA 2018)
- U.S. Securities and Exchange Commission: Recent Trends and Actions (Becker CPA 2018)
- G400 Community Meeting (AICPA 2018)
- Introduction to Business Valuation (AICPA 2017)
- GAO Green Book – Government Internal Control Standards (Becker CPA 2017)
- Risk Management in the Public Sector (Becker CPA 2017)
- Emerging Leaders Academy Year 3 (Upstream Academy 2015)
- Emerging Leaders Academy Year 2 (Upstream Academy 2014)
- Emerging Leaders Academy Year 1 (Upstream Academy 2013)
- The Emerging Partner Training Forum (AICPA 2006)
- Leadership: Becoming an Impact Player (Center for Corporate Financial Leadership 2003)

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Expert Testimony

Venue	Petitioner	Petition Date	Cause No.	Subject
Indiana Utility Regulatory Commission	Gibson Water Authority	4/26/2021	45535	Rates and Financing
Indiana Utility Regulatory Commission	Citizens Wastewater of Westfield, LLC	03/31/2020	45362	Utility Fair Value
Indiana Utility Regulatory Commission	German Township Water District, Inc.	02/04/2020	45340-U	Rates
Pennsylvania Public Utility Commission	Community Utilities of Pennsylvania, Inc. (Water)	04/03/2019	3008947	Cost of Service and Single Tariff Pricing
Pennsylvania Public Utility Commission	Community Utilities of Pennsylvania, Inc. (Wastewater)	04/03/2019	3008948	Cost of Service and Single Tariff Pricing
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	2/1/2019	45198	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Gibson Water, Inc.	04/24/2018	45080	Rates and Financing
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	3/13/2018	45062	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	5/4/2016	44783	Financing
Indiana Utility Regulatory Commission	Citizens Thermal Energy	4/22/2016	44781	Cost of Service Rates
Indiana Utility Regulatory Commission	Citizens Gas of Westfield	12/30/2015	44731	Utility Fair Value
Indiana Utility Regulatory Commission	Community Utilities of Indiana, Inc.	12/15/2015	44724	Cost of Service Rates
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	7/6/2015	44642	Rates and Financing
Indiana Utility Regulatory Commission	Michigan City Department of Water Works	9/24/2014	44538	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Kingsbury Utility Corporation	3/27/2013	44327	Rates and Financing
Indiana Utility Regulatory Commission	Pioneer Water, LLC	2/22/2013	44309-U	Rates
Indiana Utility Regulatory Commission	City of Mishawaka Utilities	9/20/2012	44249	Cost of Service Rates
Indiana Utility Regulatory Commission	White River Citizens United (Testimony on behalf of Respondent Bargersville Municipal Water Utility	6/12/2012	44215	Complaint
Indiana Utility Regulatory Commission	Lebanon Municipal Electric Utility	1/9/2012	44142	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	10/17/2011	44095	Financing

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Expert Testimony

Venue	Petitioner	Petition Date	Cause No.	Subject
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	3/11/2010	43869	Cost of Service Rates and Financing
Indiana Utility Regulatory Commission	South Harrison Water Corporation	1/26/2010	43850	Cost of Service Rates
Indiana Utility Regulatory Commission	Mapleturn Utilities, Inc.	9/2/2009	43777-U	Rates and Financing
Indiana Utility Regulatory Commission	Peru Municipal Electric Utility	4/29/2009	43679	Coincident Peak Reduction Credit
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	3/18/2009	43658	Rates and Financing
Indiana Utility Regulatory Commission	Citizens Gas of Westfield	12/31/2008	43624	Utility Fair Value
Indiana Utility Regulatory Commission	Peru Municipal Electric Utility	7/7/2008	43529	Economic Development Rider
Indiana Utility Regulatory Commission	Kingsford Heights Municipal Water Utility	5/27/2008	43502-U	Rates
Indiana Utility Regulatory Commission	Knightstown Municipal Water Utility	2/19/2008	43440-U	Rates
Indiana Utility Regulatory Commission	Ramsey Water Company, Inc.	12/27/2007	43413	Rates
Indiana Utility Regulatory Commission	Bargersville Municipal Water Utility	12/21/2007	43410	Rates
Indiana Utility Regulatory Commission	Sanitary District of Hammond	6/25/2007	43307	Cost of Service Rates
Indiana Utility Regulatory Commission	Indiana Michigan Power Company (Testimony on behalf of Intervenor, Fort Wayne City Light and Power Works	6/19/2007	43306	Rates – Alternate Feed Service Rider
Indiana Utility Regulatory Commission	Ogden Dunes Municipal Water Utility	5/16/2007	43295-U	Rates
Indiana Utility Regulatory Commission	Peru Municipal Electric Utility	12/22/2006	43200	Rates
Indiana Utility Regulatory Commission	Elkhart Municipal Water Utility	12/11/2006	43191	Rates
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	3/15/2006	43003	Rates and Financing
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	2/28/2006	42993	Rates and Financing
Indiana Utility Regulatory Commission	Knightstown Municipal Electric Utility	10/12/2005	42933-U	Rates
Indiana Utility Regulatory Commission	Bargersville Municipal Electric Utility	8/2/2005	42892	Rates
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	5/11/2005	42856	Rates
Indiana Utility Regulatory Commission	Edwardsville Water Corporation	3/2/2005	42798	Financing
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	1/20/2005	42776	Financing

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bakertilly
now, for tomorrow.

Scott A. Miller, page 6

Expert Testimony

Venue	Petitioner	Petition Date	Cause No.	Subject
Indiana Utility Regulatory Commission	Sullivan-Vigo Water Corporation	3/19/2004	42599	Financing
Indiana Utility Regulatory Commission	Michigan City Department of Water Works	9/18/2003	42517	Rates
Indiana Utility Regulatory Commission	Morgan County Rural Water Corporation	7/9/2003	42481	Rates
Indiana Utility Regulatory Commission	Van Buren Water, Inc.	1/22/2002	42159	Rates
Indiana Utility Regulatory Commission	Riverside Water Company, Inc.	11/6/2001	42122	Rates
Indiana Utility Regulatory Commission	Chandler Municipal Water Utility	8/17/2001	42066	Rates
Indiana Utility Regulatory Commission	Lafayette Municipal Water Utility	10/11/2000	41845	Rates and Financing
Indiana Utility Regulatory Commission	Michigan City Department of Water Works	3/17/2000	41689	Rates and Financing
Indiana Utility Regulatory Commission	Dunkirk Municipal Water Utility	5/5/1999	41431	Rates and Financing

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I&E Statement No. 1
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WASTEWATER DIVISION

Docket No. R-2021-3025207

Direct Testimony

of

Zachari Walker

Bureau of Investigation and Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

CASH WORKING CAPITAL

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Zachari Walker, and my business address is Pennsylvania Public Utility Commission, 400 North Street, Harrisburg, PA 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND?

A. My education and employment background is attached as Appendix A.

Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.

A. I&E is responsible for representing the public interest in rate and other proceedings before the Commission. I&E's analysis in this proceeding is based on its responsibility to represent the public interest. This responsibility requires balancing the interests of ratepayers, the regulated utility, and the regulated community as a whole.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my direct testimony is to review the base rate filing of Community Utilities of Pennsylvania Inc. – Wastewater Division (CUPA WW or Company) and recommend adjustments to the Company's proposed operating and maintenance (O&M) expenses and cash working capital claims for the fully projected future test year (FPFTY) ending December 31, 2022.

Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?

A. Yes. I&E Exhibit No. 1 contains schedules that support my direct testimony.

Q. PLEASE SUMMARIZE THE COMPANY'S REQUESTED REVENUE INCREASE.

A. The Company's base rate case was filed on April 12, 2021,[1] with a requested increase of $998,705 to claimed present rate revenues of $2,672,400 resulting in a total overall revenue requirement of $3,671,104 for the FPFTY.[2]

---

[1] CUPA WW filing, Section 1, p. 1.

[2] Errata to Supplement No. 7 to Tariff Wastewater – Pa PUC No. 1 Etc. – CUPA, Section 1, p. 11.

1 **Q. PLEASE SUMMARIZE YOUR ADJUSTMENTS.**

2 A. The following table summarizes my recommended adjustments:

3

	Company Claim	I&E Recommended Allowance	I&E Adjustment
O&M Expenses:			
Employee Pensions and Benefits	$132,598	$93,682	($38,916)
Chemical Expense	$129,205	$72,658	($56,547)
Materials, Supplies, and Other Maintenance Expense	$134,556	$101,756	($32,800)
Rate Case Expense	$43,464	$35,021	($8,443)
Total O&M Adjustments			**($136,706)**
Rate Base:			
Deferred Rate Case Expense	$140,084	$0	($140,084)
Cash Working Capital	$226,180	$209,092	($17,088)
Total Rate Base Adjustments			**($157,172)**

4

5 **I&E OVERALL RECOMMENDED REVENUE REQUIREMENT**

6 **Q. WHAT IS I&E'S TOTAL RECOMMENDED REVENUE REQUIREMENT?**

7 A. I&E's total recommended revenue requirement is $3,365,868. This recommended
8 revenue requirement represents an increase of $693,468 to the Company's claimed
9 present rate revenues of $2,672,400. This total recommended allowance
10 incorporates my adjustments made in this testimony to O&M expenses, taxes, and
11 rate base, and those recommended adjustments made in the testimony of I&E
12 witnesses Christopher Keller (I&E Statement No. 2) and Esyan Sakaya (I&E
13 Statement No. 3).

A calculation of the I&E recommended revenue requirement is shown below:

Community Utilities of PA Inc. - Wastewater		TABLE I			
R-2021-3025207		INCOME	SUMMARY		
	12/31/22	INVESTIGATION & ENFORCEMENT			
	Proforma	[----------			----------
	Present Rates	Adjustments	Present Rates	Allowances	Proposed
	$	$	$	$	$
Operating Revenue	2,672,400	0	2,672,400	693,468	3,365,868
Deductions:					
O&M Expenses	1,824,130	-136,706	1,687,424	5,062	1,692,486
Depreciation	519,721	-11,380	508,341		508,341
Taxes, Other	38,466	0	38,466	4,577	43,043
Income Taxes:					
Current State	-6,161	16,467	10,306	68,315	78,621
Current Federal	-11,656	31,156	19,500	129,258	148,758
Deferred Taxes	0	0	0		0
ITC	0	0	0		0
Total Deductions	2,364,500	-100,463	2,264,037	207,212	2,471,249
Income Available	307,900	100,463	408,363	486,256	894,619
Rate Base	13,302,089	-612,451	12,689,638	0	12,689,638
Rate of Return	2.31%		3.22%		7.05%

EMPLOYEE PENSIONS AND BENEFITS

Q. WHAT IS INCLUDED IN THE COMPANY'S EMPLOYEE PENSIONS AND BENEFITS CLAIM?

A. The Company's claim for employee pensions and benefits includes a 54.21% allocation of the total allocated payroll and benefits expense, $244,588.[3] The allocated expense includes a 13.90% "Leadership" Equivalent Residential

[3] CUPA WW Statement No. 2, Exhibit WP-PB-03, p. 2.

Connection (ERC) allocation, a 9.83% "North" ERC allocation, and a 37.78% "Mid-Atlantic" ERC allocation.[4]

Q. WHAT IS THE COMPANY'S EMPLOYEE PENSIONS AND BENEFITS CLAIM?

A. The Company's employee pensions and benefits claim is $132,598.[5]

Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?

A. The Company states its forecasted pension and benefits costs are based on review and analysis of current and projected headcounts and corresponding benefits, the cost increase is driven by the level of health insurance claims, and health insurance costs are projected to increase 5%-8% annually.[6] The Company also states employee benefits fluctuate as salary expenses and headcount changes.[7]

Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?

A. No.

---

4 CUPA WW Statement No. 2, Exhibit WP-PB-03, p. 2.
5 CUPA WW filing, Section 1, p. 12.
6 CUPA WW Statement No. 2, p. 8.
7 I&E Exhibit No. 1, Schedule 1.

Q. WHAT DO YOU RECOMMEND FOR EMPLOYEE PENSIONS AND BENEFITS?

A. I recommend an allowance of $93,682 or a reduction of $38,916 ($132,598 - $93,682) to the Company's claim.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on the Company's response to I&E-RE-8-D and the historical decline of employee pensions and benefits expense as a percentage of the Company's salaries and wages expense over the last three years.[8] Using the figures contained in the response to I&E-RE-3-D,[9] I have determined that employee pensions and benefits as a percentage of salaries and wages has been trending downward (27% in 2018, 22% in 2019, and 20% in 2020), and my recommended allowance of $93,682 ($469,108 x 20%); is calculated as 20% of the Company's fully projected future test year (FPFTY) proposed salaries and wages expense; $469,108.[10] This is based on the 20% historic test year (HTY) 2020 percentage of employee pensions and benefits of total salaries and wages.

Q. WHY DID YOU NOT RECOMMEND A HISTORIC AVERAGE OF THE PERCENTAGES?

A. Using a historic average would not be appropriate because benefits as a percentage

---

[8] I&E Exhibit No. 1, Schedules 1 and 2.
[9] I&E Exhibit No. 1, Schedule 3, pp. 1-2.
[10] CUPA WW Statement No. 3, Exhibit DMC-1, Section 1, p. 12.

of total salaries has been trending downward over the most recent three historic years. In this instance, the most recent (2020) percentage, which produces an allowance of $93,682, is most appropriate as it is in line with the fluctuating 2018, 2019, and 2020 historic actual amounts of $86,468,[11] $93,542,[12] and $90,201.[13]

<u>CHEMICAL EXPENSE</u>

Q. WHAT IS THE COMPANY'S CLAIM FOR CHEMICAL EXPENSE?

A. The Company's claim for chemical expense is $129,205.[14]

Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?

A. The Company states monthly forecasts for chemicals are based on anticipated demand of each chemical. The forecast is based on analysis completed by operations, which includes estimated costs per unit, by chemical type. The estimated chemical costs are determined by review of current costs. An estimated number of units, which is based on historical seasonal needs, of each chemical type is then used as a multiplier to determine forecasted chemical expense for each system.[15]

---

[11] I&E Exhibit No. 1, Schedule 3, p. 2.
[12] I&E Exhibit No. 1, Schedule 3, p. 2.
[13] I&E Exhibit No. 1, Schedule 2 and CUPA WW Statement No. 3, Exhibit DMC-1, Section 1, p. 12.
[14] CUPA WW filing, Section 1, p. 12.
[15] CUPA WW Statement No. 3, p. 10.

Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?

A. No.

Q. WHAT IS YOUR RECOMMENDATION FOR CHEMICAL EXPENSE?

A. I recommend an allowance of $72,658 or a reduction of $56,547 ($129,205 - $72,658) to the Company's claim.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on a historic three-year average expense per current ERC.[16] In response to I&E-RE-3-D, the Company provided total chemical expenses for 2018 and 2019.[17] In response to I&E-RE-36, the Company states when usage increases, more purchased power is required at the treatment plants.[18] This would indicate customer usage affects chemical usage. Therefore, it is reasonable to surmise customer usage drives fluctuations of chemical expense disregarding any speculative inventory stockpiling.

According to CUPA Supplement No. 2 to Tariff Wastewater – Pa. PUC No. 1 at Docket No. R-2019-3008948, Equivalent Residential Customers is a ratio assigned to a customer or class of customers based on meter sizes and an average number of gallons per day. The actual number of connections is then multiplied

[16] I&E Exhibit No. 1, Schedule 4.
[17] I&E Exhibit No. 1, Schedule 3, pp. 1-2.
[18] I&E Exhibit No. 1, Schedule 5.

by the ERC to determine a total number of ERCs per subdivision or company.[19] In summary, an increase in ERC would equate to an increase in customer usage and thus, an increase in chemical expense.

My recommendation to average the historic costs smooths the historic years' expense fluctuation, while recognizing factors that affect chemical expense.

Q. HOW DID YOU CALCULATE YOUR RECOMMENDATION?

A. In response to I&E-RE-3-D,[20] the Company provided the 2018 and 2019 chemical expense totals. These historical annual totals, $49,590 and $70,094 respectively, were then divided by the corresponding Wastewater Division ERC (3,143 and 3,721 respectively).[21] The same calculation was performed for the HTY chemical expense ($83,077), provided in the Company's filing, and corresponding ERC (3,897).[22] The resulting expense per ERC values were then averaged (($15.78 + $18.84 + $21.32) ÷ 3) and multiplied by the current ERC count yielding a recommended allowance of $72,658 ($18.64 x 3,897).

---

[19] I&E Exhibit No. 1, Schedule 6.
[20] I&E Exhibit No. 1, Schedule 3, pp. 1-2.
[21] I&E Exhibit No. 1, Schedule 4.
[22] CUPA WW Statement No. 3, Exhibit WP-DC-01.

1 **MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE**

2 **Q. WHAT IS THE COMPANY'S CLAIM FOR MATERIALS, SUPPLIES, AND**
3 **OTHER MAINTENANCE EXPENSE?**

4 A. The Company's claim for materials, supplies, and other maintenance expense is
5 $134,556.[23]

6

7 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIM?**

8 A. The Company states these expenses are based on a three-year historical average
9 expense analysis. Materials, supplies, and other maintenance expense is broken
10 down into the following categories: deferred maintenance ($32,800 in the
11 FPFTY), uniforms ($3,247 in the FPFTY), weather/hurricane/fuel expense ($2,329
12 in the FPFTY), and other ($96,180 in the FPFTY).[24]

13

14 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM FOR MATERIALS,**
15 **SUPPLIES, AND OTHER MAINTENANCE EXPENSE?**

16 A. No.

17

18 **Q. WHAT DO YOU RECOMMEND?**

19 A. I recommend an allowance of $101,756 or a reduction of $32,800 ($134,556 -
20 $101,756) to the Company's claim.

---

[23] CUPA WW Statement No. 3, Exhibit DMC-1, Section 1, p. 12.
[24] CUPA WW Statement No. 3, p. 7-8.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. I recommend disallowance of the $32,800 FPFTY deferred maintenance expense. Routine operating expenses are not appropriately subjected to deferral treatment, representing an out of period expense. Therefore, the Company should not be granted permission to recover prior period routine operating expenses.

RATE CASE EXPENSE

Q. DESCRIBE THE NATURE AND TYPES OF EXPENDITURES TYPICALLY ALLOWED AS PART OF A REGULATED UTILITY'S OVERALL RATE CASE EXPENSE.

A. The nature and types of individual expenditures that comprise a utility's allowable claim for rate case expense are those directly incurred to compile, present, and defend a utility's request for a base rate increase before the Commission. The actual expenditures and estimated costs typically found in an allowable rate case expense claim include legal fees for outside counsel, fees to outside consultants, and the cost of printing, document assembly, and postage. Note that the Company refers to its rate case expense as regulatory commission expense in direct testimony.[25]

[25] CUPA WW Statement No. 3, p. 13.

Q. IN TWO AREAS, THE COMPANY REFERENCES ITS CLAIM AS AMORTIZED COSTS.[26] BRIEFLY DISCUSS THE CONCEPT OF AMORTIZATION.

A. Amortization is an accounting procedure that writes off a non-recurring or infrequently recurring expense over a reasonable period of years by expensing a pro rata share based on the selected amortization period. Although a claim for an unrecovered *normalized* expense would be disallowed if requested in a subsequent base rate case, an amortized expense allowance could be claimed in a succeeding rate case if there is a remaining unamortized balance.

Q. IS THE COMPANY'S PROPOSED AMORTIZATION TREATMENT PROPER?

A. No. The Company's rate case expense claim should be normalized rather than amortized.

Q. WHAT IS NORMALIZATION?

A. Normalization is a ratemaking concept that describes the transformation of an operating expense that recurs at irregular intervals into a "normal" annual test year allowance. Normalization specifically addresses the prospective recovery of an ongoing expense that recurs sporadically. Normalized expenses are no different

[26] CUPA WW Statement No 3, pp. 13, 18.

than other O&M expenses in that the Company is given the opportunity to achieve full recovery.

Q. HOW HAS THE COMMISSION TRADITIONALLY TREATED RATE CASE EXPENSE FOR RATEMAKING PURPOSES?

A. The Commission has historically stated that it considers prudently incurred rate case expense as an ongoing expense, occurring at irregular intervals, related to the rendering of utility service. Thus, it is necessary to normalize rate case expense for ratemaking purposes.

Q. WHAT IS THE COMPANY'S CLAIM FOR RATE CASE EXPENSE?

A. CUPA WW is claiming rate case expense in two separate areas of its filing. The Company is proposing an O&M claim for rate case expense of $43,464[27] and is requesting rate base treatment for the total "deferred rate case cost" of $140,084.[28]

Q. WHAT IS THE BASIS FOR THE EXPENSE PORTION OF THE COMPANY'S CLAIM?

A. The Company states this claim is based on current and planned rate case costs. Additionally, the Company states that regulatory commission expense is forecasted to increase in the FPFTY, and this increase is driven by the projected

[27] CUPA WW Statement No. 3, Exhibit DMC-1, Section 1, p. 12.
[28] CUPA WW Statement No. 3, p. 18.

1 expense to be incurred for the current case.[29] The Company is including the
2 unamortized rate case expense amount of $33,774 ($62,299 × 54.21%) in its
3 Wastewater Division expense claim.
4
5 **Q. WHAT IS THE BASIS FOR THE COMPANY PROPOSED RATE BASE**
6 **TREATMENT OF "UNAMORTIZED COSTS"?**
7 A. The Company has claimed deferred rate case expense in rate base because the
8 deferred charges are incurred solely for the benefit of the ratepayers. The
9 Company opines that earning a return "on" and "of" the deferred asset is necessary
10 to help offset the negative net present value and this allows the Company to easily
11 attract capital necessary to continue providing an adequate level of service.[30]
12
13 **Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?**
14 A. No.
15
16 **Q. WHAT IS YOUR RECOMMENDATION FOR RATE CASE EXPENSE?**
17 A. I recommend an allowance of $35,021 for rate case expense (O&M) or a reduction
18 of $8,443 ($43,464 - $35,021) to the Company's claim. Additionally, I
19 recommend the deferred amount in rate base of $140,084 be disallowed in its
20 entirety.

[29] CUPA WW Statement No. 3, p. 13.
[30] CUPA WW Statement No. 3, p. 19.

1 **Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?**

2 A. I recommend the Company normalize its rate case expense as opposed to
3 amortizing it, since the Commission recognizes rate case expense as an ongoing
4 expense, occurring at irregular intervals, related to the rendering of utility service.
5 As such, rate case expense is subject to normalization for ratemaking purposes and
6 expensing amounts for prior proceedings should not be allowed. It is also my
7 recommendation that the unamortized rate case expense ($33,774) (as included in
8 the O&M portion of the claim) be disallowed since this is not consistent with
9 normalization treatment. The removal of the unamortized rate case results in a
10 total rate case expense of $140,084 normalized over four years, yielding an annual
11 rate case expense allowance of $35,021. My recommendation decreases rate case
12 expense by $8,443 ($43,464 - $35,021) annually.[31] In addition, and to keep the
13 Company's allowance consistent with normalization treatment, I recommend the
14 $140,084 deferred rate case expense be disallowed for rate base treatment.
15

16 **Q. PLEASE EXPLAIN IN FURTHER DETAIL WHY YOU RECOMMEND**
17 **DISALLOWANCE OF THE DEFERRED RATE CASE AMOUNT OF**
18 **$140,084.**

19 A. My recommended disallowance for rate base treatment of the deferred cost of
20 $140,084 is directly supported by my recommendation to normalize, and not

[31] I&E Exhibit No. 1, Schedule 7.

amortize, rate case expense. Items included in rate base increase the value of the Company or its assets such as investment in a new wastewater plant or facility, while items included in O&M are expenses that need to be paid by the Company to operate, such as material expense, chemical expense, tank inspections expense, and rate case expense. As described above, normalization is the process used to fund operations that occur intermittently on a "prospective" basis. The Company would have received an allowance in base rates in its prior rate cases to fund those future occurrences of events, occurring at irregular intervals, such as rate case filings, certain maintenance operations, permit renewals, etc.

Q. ARE THERE ANY OTHER POINTS TO NOTE CONCERNING THE COMPANY'S RATE BASE CLAIM FOR THE DEFERRED RATE CASE EXPENSE OF $140,084?

A. Yes. The $140,084 amount represents the Company's total current rate case expense claim. It should be noted that the Company is claiming a portion of that total (one-fourth) as an expense amount in the instant proceeding. Therefore, in the off chance that the Commission would decide to allow rate base treatment for an unamortized rate case expense balance, the total would need to be reduced by the expense amount allowed in this proceeding. However, as noted above, I recommend disallowance of rate base treatment for this routine operating expense as it does not align with normalization treatment.

1 **CASH WORKING CAPITAL**

2 **Q. WHAT IS A CASH WORKING CAPITAL ALLOWANCE FOR**

3 **RATEMAKING PURPOSES?**

4 A. Cash working capital (CWC) can be defined as the amount of liquidity needed to

5 meet short-term obligations and should be sufficient to cover daily operations

6 expense payments until receiving funds from customers. The Company used the

7 45-Day method (otherwise known as the 1/8-Method), which is one way to

8 calculate CWC.

9

10 **Q. WHAT IS THE COMPANY'S CWC CLAIM?**

11 A. The Company's CWC claim is $226,180.[32]

12

13 **Q. HOW DID THE COMPANY CALCULATE ITS CWC CLAIM?**

14 A. CUPA WW used the 45-Day Method. First, the Company calculated the net total

15 of maintenance expenses, general expenses, taxes other than income, and the

16 reduction of real estate taxes to arrive at a total of $1,809,443 ($1,016,598 +

17 $789,116 + $45,078 – $41,350).[33] Then, the Company multiplied the net total by

18 45 days and divided the result by 360 days to determine the cash working capital

19 requirement of $226,180 [(45 x $1,809,443) ÷ 360].

---

[32] CUPA WW Statement No. 3, Exhibit DMC-1, Section 2, p. 11.
[33] CUPA WW Statement No. 3, Exhibit DMC-1, Section 2, p. 11.

1 **Q. DO YOU AGREE WITH THE COMPANY'S USE OF THE 45-DAY**

2 **METHOD?**

3 A. Yes.

4

5 **Q. DO YOU HAVE ANY ADJUSTMENTS TO THE COMPANY'S CWC?**

6 A. Yes. I recommend an allowance of $209,092 or a reduction of $17,088 ($226,180

7 - $209,092) to the Company's claim.

8

9 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

10 A. I recommend a CWC allowance of $209,092 that is adjusted to recognize the

11 expense adjustments recommended in Mr. Sakaya's and my testimony for those

12 expenses included in the CWC computation. The adjustments are as follows:

13

O&M Expenses	Adjustment
Employee Pensions & Benefits	($38,916)
Chemical Expense	($56,547)
Materials, Supplies, and Other Maintenance Expense	($32,800)
Rate Case Expense	($8,443)
Total	**($136,706)**

14 The sum of my O&M adjustments reduces the Company's CWC amount by

15 $17,088 calculated as follows: [(45 x $136,706) ÷ 360].

1 **Q. DOES YOUR RECOMMENDED CWC ALLOWANCE REPRESENT A**

2 **FINAL RECOMMENDED ALLOWANCE?**

3 A. No. All adjustments to the Company's claims for revenues, expenses, taxes, and

4 rate base must be consistently brought together in the ALJ's Recommended

5 Decision and again in the Commission's Final Order. This process, which is

6 known as iteration, effectively prevents the determination of a precise calculation

7 until such time as all adjustments have been made to the Company's claim.

8

9 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

10 A. Yes.

Zachari Walker

Professional and Educational Background

Experience:

Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania
March 2021 to Present:
Fixed Utility Financial Analyst, Bureau of Investigation and Enforcement

Bridgestone Retail Operations, LLC, Nashville, Tennessee
December 2014 to July 2020:
Business Manager
Evaluated and validated accounting entry postings. Monitored, reconciled, and corrected daily transactions and accounts. Ensured accuracy of daily reports of business and researched inaccuracies. Utilized data analysis to determine key performance indicators and corresponding trends.

Education/Professional Development:

Bridging the Gap, Holly Ridge, North Carolina, 2021
Business Analyst Blueprint Training Program, 36 PD hours earned

Stevenson University, Stevenson, Maryland, 2014
Bachelor of Science, *magna cum laude*, Business Administration
Concentration in Finance

Utility-Related Trainings & Other Courses/Webinars:

NARUC Staff Subcommittee on Accounting & Finance, Spring 2021 Virtual Conference, April 6-8, 2021

I&E Exhibit No. 1
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WASTEWATER DIVISION

Docket No. R-2021-3025207

Exhibit to Accompany

the

Direct Testimony

of

Zachari Walker

Bureau of Investigation & Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

CASH WORKING CAPITAL

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions' Responses to Bureau of Investigation and Enforcement Data Requests Set RE-1-D to RE-28-D

I&E-RE-8-D Reference CUPA Wastewater filing Section 1, page 1-12, concerning employee pensions and benefits:

A. Provide a yearly breakdown by benefit type with supporting documentation of the HTY, FTY and FPFTY employee pensions and benefits expense amounts as follows: HTY - $32,633; FTY - $124,110; and FPFTY - $132,598;

B. Provide a yearly breakdown of employee pensions and benefits Expense for 2018 and 2019 by benefit type;

C. For each year 2018, 2019, the HTY, the FTY, and the FPFTY, provide a breakdown of employee pension/benefits by benefit type broken down between expense amount and the capitalized amount by year;

D. Provide detailed explanations with supporting documentation for any increases or decreases in employee pensions and benefits from 2018 to 2019 and 2019 to the HTY; and

E. For each of the itemized pension/benefits expense amounts in response to Part A above, provide the number of employees eligible and the actual number of employees enrolled in each benefit for 2018, 2019, the HTY, the FTY, and the FPFTY.

RESPONSE: Please refer to the attachments included in a response to I&E-RE-4D. Employee benefits fluctuate as salary expenses and headcount changes. Please refer to the response to I&E-RE-6-D and I&E-RE-6-D.

PROVIDED BY: **Perry Brown, Financial Planning & Analysis Manager**

DATE: May 20, 2021

Employee Pensions & Benefits

Historical Data:	2018 [1]	2019 [2]	HTY 2020 [3]
Salaries & Wages - Employees (S&W)	$ 317,008	$ 416,648	$ 451,679
Employee Pensions & Benefits (EP&B)	$ 86,468	$ 93,542	$ 90,201
EP&B Percent of S&W	27%	22%	20%

Company Claim:	FPFTY 2022
Salaries & Wages - Employees (S&W)	$ 469,108
Employee Pensions & Benefits (EP&B)	$ 132,598
EP&B Percent of S&W	28%

I&E Recommendation:	FPFTY 2022
Salaries & Wages - Employees (S&W)	$ 469,108
Employee Pensions & Benefits (EP&B)	$ 93,682
EP&B Percent of S&W	20%
I&E Recommended Adjustment:	**$ (38,916)**

[1] Per Response to I&E-RE-3-D.
[2] Per Response to I&E-RE-3-D.
[3] Per CUPA WW Statement No. 3, Exhibit DMC-1, Section 1, p. 12.

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc.
Wastewater Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions' Responses to Bureau of Investigation and Enforcement Data Requests Set RE-1-D to RE-28-D

I&E-RE-3-D Reference CUPA Wastewater filing Section 1, page 1-12 operating expenses, provide a similar comparative schedule of the Company's operating and maintenance expenses that includes columns for 2018 and 2019.

RESPONSE: **Please reference the attached file "I&E-RE-1 3 O&M Expenses - Wastewater"**

PROVIDED BY: **David Clark**

DATE: **May 20, 2021**

Community Utilities of Pennsylvania
Response to I&E-RE-3
O&M Expenses

Wastewater Operations

NARUC Acct. No.	Account Description	Per Books Base Year Ended 12/31/18	Per Books Base Year Ended 12/31/19
701	Wastewater - Salaries & Wages - Employees	$ 317,008	$ 416,648
704	Wastewater - Employee Pensions & Benefits	86,468	93,452
711	Wastewater - Sludge Hauling & Sewer Rodding	218,285	224,130
615	Wastewater - Purchased Power	157,276	169,214
610	Wastewater - Purchased Water	-	-
718	Wastewater - Chemicals	49,590	70,094
720	Wastewater - Materials, Supplies, and Other Maintenance Expense	29,924	61,491
731	Wastewater - Engineering Fees	1,747	5,457
732	Wastewater - Contractual Services - Accounting	7,242	6,016
733	Wastewater - Contractual Services - Legal	10,852	8,785
736	Wastewater - Contractual Services - Other	6,214	13,701
741	Wastewater - Rental of Building/Real Property	2,923	8,940
750	Wastewater - Transportation Expenses	20,611	28,414
759	Wastewater - Insurance - Other	34,575	42,201
760	Wastewater - Advertising Expense	366	5
675	Wastewater - Office Utilities, Supplies & Other Office Expenses	56,591	86,918
766	Wastewater - Regulatory Commission Expenses - Normalization of Rate Case Expense	20,345	20,264
767	Wastewater - Regulatory Commission Expenses - Other	2,425	219
775	Wastewater - Testing and Miscellaneous Expense	40,247	71,106
	Total Operating and Maintenance Expenses	$ 1,062,687	$ 1,327,054

CHEMICAL EXPENSE

Historical Data	2018 [1]	2019 [1]
Chemical Expense	$ 49,590	$ 70,094
Wastewater Division ERC	3,143 [2]	3,721 [2]
Expense Per ERC	$ 15.78	$ 18.84

	HTY 2020 [3]	3-Year Average
Chemical Expense	$ 83,077	$ 67,587
Wastewater Division ERC	**3,897** [4]	
Expense Per ERC	$ 21.32	$ 18.64

Company Claim	FPFTY 2022 [3]
Chemical Expense	$ 129,205 [4]
Wastewater Division ERC	**3,897**
Expense Per ERC	$ 33.15

I&E Recommendation	FPFTY 2022
Wastewater Division ERC	3,897 [4]
Expense Per ERC	$ 18.64
Recommended Allowance	**$ 72,658**
Recommended Adjustment:	**$ (56,547)**

1 Per response to I&E-RE-3-D.
2 ERC sourced from Annual Report unless otherwise specified.
3 Per CUPA WW Statement No. 3, Exhibit DMC-1, Section 1, p. 12.
4 Per CUPA WW Statement No. 3, Exhibit DMC-2, Exhibit WP-DC-01.

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater
Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions' Responses to
Bureau of Investigation and Enforcement Data Requests Set RE Nos. 33-36

I&E-RE-36 Reference CUPA Wastewater filing Section 1, page 1-12 and CUPA W Statement No.
3, pages 6-7, concerning purchased power expense. Provide a description of the cost driver(s) for this expense account.

RESPONSE: **The cost drivers for purchased power are the price per KWh and the usage. There are additional variables due to seasonality and customer usage, as more purchased power is required to pump water to customer premises when demand increases. Similarly, when usage increases, more purchased power is required at the treatment plants as well.**

PROVIDED BY: **David Clark**

DATE: **July 8, 2021**

Community Utilities of Pennsylvania, Inc. Supplement No. 5 to Tariff Water – Pa. PUC No. 1
at Docket No. R-2019-3008948

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.'S RESPONSES TO BUREAU OF TECHNICAL UTILITY SERVICES DATA REQUESTS, SET I

R-11. Please provide a definition for the term "Equivalent Residential Customers" and explain how this definition differs from CUPA-WD's tariff definition for Equivalent Dwelling Units.

RESPONSE:
ERC is a ratio assigned to a customer or class of customers based on a meter size and an average number of gallonage per day. The actual number of connections is then multiplied by the ERC to determine a total number of ERCs per subdivision or company. The following table depicts the ratios used:

Meter Size	ERCs
Residential	
Single family detached dwellings	1.0
Multiple family dwellings	0.8
Mobile homes	0.8
Nonresidential	
5/8"	1.0
¾"	1.5
1"	2.5
1 ½"	5.0
2"	8.0
3"	15.0
4"	25.0
6"	50.0
8"	80.0
10"	115.0
12"	215.0

For example, a nonresidential water and wastewater customer with a 2" meter would be considered 8 ERCs for water and 8 ERCs for wastewater for a total of 16 ERCs.

The Company considers a dwelling unit to be a structure or dwelling intended to be occupied as a whole by one family. The ERC is depended on the meter size whereas the EDU is determined based upon anticipated gallonage demand.

Provided by: Perry Brown

Position: Senior Financial Analyst, Community Utilities of Pennsylvania

Rate Case Expense

	Total	Wastewater Allocation
Company Claim*:		
Cost of Current Case	$ 250,130	$ 140,084
Unamortized Rate Case Expense	$ 62,299	$ 33,774
Total Rate Case Expense	$ 312,429	$ 173,858
Amortized by 4 Years	$ 78,107	**$ 43,464**
I&E Recommendation:		
Total Rate Case Expense	$ 250,130	$ 140,084
Normalized over 4 Years	$ 62,533	**$ 35,021**
I&E Recommended Adjustment		**$ (8,443)**

*Per CUPA WW Statement No. 3, Exhibit DMC-1, Section 2, p. 8.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025207
Community Utilities of Pennsylvania Inc.	:	
Wastewater Division	:	

VERIFICATION OF THE
BUREAU OF INVESTIGATION AND ENFORCEMENT

I, Zachari Walker, on behalf of the Bureau of Investigation and Enforcement, hereby verify that the documents preliminarily identified as I&E Statement No. 1, I&E Exhibit No. 1, I&E Statement No. 1-SR and I&E Exhibit No. 1-SR were prepared by me or under my direct supervision and control. Furthermore, the facts contained therein are true and correct to the best of my knowledge, information and belief and I expect to be able to prove the same at an Evidentiary Hearing in this matter. This Verification is made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

/s/ *Zachari Walker*
Zachari Walker
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Dated: September 7, 2021

I&E Statement No. 2
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA

Docket No. R-2021-3025207 – WASTEWATER DIVISION

Direct Testimony

of

Christopher Keller

Bureau of Investigation & Enforcement

Concerning:

Rate of Return

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Christopher Keller. My business address is Pennsylvania Public Utility Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg, PA 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

Q. WHAT IS YOUR EDUCATION AND EMPLOYMENT BACKGROUND?

A. An outline of my education and employment history is attached as Appendix A.

Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.

A. I&E is responsible for protecting the public interest in proceedings before the Commission. I&E's analysis in the proceedings is based on its responsibility to represent the public interest. This responsibility requires the balancing of the interests of ratepayers, the regulated utility, and the regulated community as a whole.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my testimony is to review the base rate filing of Community Utilities of Pennsylvania Inc. – Wastewater Division (CUPA or Company), and make recommendations regarding the Company's rate of return, including capital structure,

cost of long-term debt, the cost of equity, and the overall fair rate of return for the fully projected future test year (FPFTY) ending December 31, 2022.

Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?

A. Yes. I&E Exhibit No. 2 contains schedules that support my direct testimony.

BACKGROUND

Q. WHAT IS THE GENERAL DEFINITION OF RATE OF RETURN IN THE CONTEXT OF A RATE CASE?

A. Rate of return is one of the components of the revenue requirement formula. Rate of return is the amount of revenue an investment generates in the form of net income and is usually expressed as a percentage of the amount of capital invested over a given period of time.

Q. WHAT IS THE REVENUE REQUIREMENT FORMULA?

A. The revenue requirement formula used in base rate cases is as follows: RR = E + D + T + (RB x ROR)

Where:

RR	=	Revenue Requirement
E	=	Operating Expenses
D	=	Depreciation Expense
T	=	Taxes
RB	=	Rate Base
ROR	=	Overall Rate of Return

In the above formula, the rate of return is expressed as a percentage. The calculation of that percentage is independent of the determination of the appropriate rate base value for ratemaking purposes. As such, the appropriate total dollar return is dependent upon the proper computation of the rate of return and the proper valuation of the Company's rate base.

Q. WHAT CONSTITUTES A FAIR AND REASONABLE OVERALL RATE OF RETURN?

A. A fair and reasonable overall rate of return is one that will allow the utility an opportunity to recover those costs prudently incurred by all classes of capital used to finance the rate base during the prospective period in which its rates will be in effect.

The *Bluefield Water Works & Improvements Co. v. Public Service Comm. of West Virginia,* 262 U.S. 679, 692-93 (1923), and the *FPC v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944) cases set forth the principles that are generally accepted by regulators throughout the country as the appropriate criteria for measuring a fair rate of return:

1. A utility is entitled to a return similar to that being earned by other enterprises with corresponding risks and uncertainties, but not as high as those earned by highly profitable or speculative ventures.
2. A utility is entitled to a return level reasonably sufficient to assure financial soundness.
3. A utility is entitled to a return sufficient to maintain and support its credit and raise necessary capital.

4. A fair return can change (increase or decrease) along with economic conditions and capital markets.

Q. EXPLAIN HOW THE OVERALL RATE OF RETURN IS TRADITIONALLY CALCULATED IN BASE RATE PROCEEDINGS.

A. In base rate proceedings, the overall rate of return is traditionally calculated using the weighted average cost of capital method. To calculate the weighted average cost of capital, a company's capital structure must first be determined by comparing the percentage of each capitalization component, which has financed rate base, to total capital. Next, the effective cost rate of each capital structure component must be determined. The historical component of the cost rate of debt can be computed accurately, and any future debt issuances are based on estimates. The cost rate of common equity is not fixed and is more difficult to measure. Because of this difficulty, a proxy group is used as discussed later in this testimony. Next, each capital structure component percentage is multiplied by its corresponding effective cost rate to determine the weighted capital component cost rate. The I&E table in the *"I&E Position"* section below demonstrates the interaction of each capital structure component and its corresponding effective cost rate. Finally, the sum of the weighted cost rates produces the overall rate of return. This overall rate of return is multiplied by the rate base to determine the return portion of a company's revenue requirement.

1 **COMPANY'S RATE OF RETURN CLAIM**

2 **Q. WHO IS THE COMPANY'S RATE OF RETURN WITNESS?**

3 A. CUPA witness Dylan W. D'Ascendis is the primary witness addressing rate of return
4 (CUPA Statement No. 5). Mr. D'Ascendis provided analysis for the claimed capital
5 structures, long-term debt, and cost of common equity for CUPA.

6

7 **Q. PLEASE SUMMARIZE THE COMPANY'S RATE OF RETURN CLAIM.**

8 A. Mr. D'Ascendis recommended the following rate of return for the Company based on
9 its FPFTY ending December 31, 2022 (CUPA Schedule DWD-1, p. 1):

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.94%
Total	100.00%		7.58%

10

11

12 **I&E POSITION**

13 **Q. PLEASE SUMMARIZE YOUR RATE OF RETURN RECOMMENDATION.**

14 A. I recommend the following rate of return for the Company (I&E Exhibit No. 2,
15 Schedule 1):

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.24%	4.41%
Total	100.00%		7.05%

16

1 **PROXY GROUP**

2 **Q. WHAT IS A PROXY GROUP AS USED IN BASE RATE CASES?**

3 A. A proxy group is a set of companies that have similar traits of risk in comparison to
4 the subject utility. This group of companies acts as a benchmark for determining the
5 subject utility's rate of return in a base rate case.

6

7 **Q. WHAT ARE THE REASONS FOR USING A PROXY GROUP?**

8 A. A proxy group's cost of equity is used as a benchmark to satisfy the long-established
9 guideline of utility regulation that seeks to provide the subject utility with the
10 opportunity to earn a return similar to that of enterprises with corresponding risks and
11 uncertainties.

12 A proxy group is typically utilized since the use of data exclusively from one
13 company may be less reliable. The lower reliability occurs because the data for one
14 company may be subject to events that can cause short-term anomalies in the
15 marketplace. The rate of return on common equity for a single company could
16 become distorted in these circumstances and would therefore not be representative of
17 similarly situated companies. Therefore, a proxy group has the effect of smoothing
18 out potential anomalies associated with a single company.

19

20 **Q. DO ANY OF THE CRITERIA YOU USE IN SELECTING YOUR PROXY**
21 **GROUP REQUIRE THAT THE COMPANIES SELECTED ARE**
22 **WASTEWATER UTILITIES?**

23 A. No. Few, if any, publicly held 'wastewater only' utilities exist because most water

companies have diversified their business to include wastewater operations. Accordingly, this type of criterion produces an insufficient sample of companies for my proxy group, adversely affecting the calculation of a fair cost of equity for the subject utility. Additionally, as listed as one of my criteria below, Value Line does not specifically cover the wastewater industry. Therefore, as is common practice for wastewater utility cost of equity analyses, my proxy group consists of regulated water utility companies.

Q. WHAT CRITERIA DID YOU USE IN SELECTING YOUR WATER INDUSTRY PROXY GROUP?

A. The criteria for my proxy group was designed to select companies that are representative of CUPA. I applied the following criteria to Value Line's Water Utility company group:

1. Fifty percent or more of the company's revenues must be generated from the regulated water utility industry;
2. The company's stock must be publicly traded;
3. Investment information for the company must be available from more than one source, which includes Value Line;
4. The company must not be currently involved/targeted in an announced material merger or acquisition; and
5. The company must have four consecutive years of historic earnings data.

Q. WHAT CRITERIA DID MR. D'ASCENDIS USE IN SELECTING HIS WATER PROXY GROUP COMPANIES?

A. Mr. D'Ascendis determined his proxy group of seven water companies by using the following criteria (CUPA Statement No. 5, p. 12, lines 4-18):

1. The company is included in the Water Utility Group of Value Line's Standard Edition;
2. The company has 70% or greater of 2019 total operating income and 70% or greater of 2019 total assets attributable to regulated water operations;
3. At the time of the preparation of Mr. D'Ascendis' testimony, the company must not have publicly announced they were involved in any major merger or acquisition activity;
4. The company must not have cut or omitted its common dividends during the five years ended 2019 or through the time of the preparation of Mr. D'Ascendis' testimony;
5. The company must have Value Line and Bloomberg Professional Services (Bloomberg) adjusted betas;
6. The company must have a positive Value Line five-year dividends per share (DPS) growth rate projection; and
7. The company must have Value Line, Zacks, Yahoo! Finance, or Bloomberg consensus five-year earnings per share (EPS) growth rate projections.

Q. WHAT PROXY GROUP DID YOU USE IN YOUR ANALYSIS?

A. I included the following seven companies in my proxy group (I&E Exhibit No. 2, Schedule 2):

American Water Works	AWK
American States Water Co.	AWR
California Water Services Group	CWT
Middlesex Water Co	MSEX
SJW Group	SJW
Essential Utilities	WTRG
York Water Company	YORW

Q. WHAT PROXY GROUP DID MR. D'ASCENDIS USE IN HIS ANALYSIS?

A. Mr. D'Ascendis utilized the same companies as my proxy group (CUPA Schedule DWD-2, p. 2).

<u>CAPITAL STRUCTURE</u>

Q. WHAT IS A CAPITAL STRUCTURE?

A. A capital structure represents how a firm has financed its rate base with different sources of funds. The primary funding sources are long-term debt and common equity. A capital structure may also include preferred stock and/or short-term debt.

Q. WHAT IS THE COMPANY'S CLAIMED CAPITAL STRUCTURE?

A. The Company's claimed capital structure is summarized in the table below (CUPA Statement No. 5, p. 13, lines 13-15 and CUPA Schedule DWD-1, p. 1):

Type of Capital	Ratio
Long-Term Debt	52.32%
Common Equity	47.68%
Total	100.00%

Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIMED CAPITAL STRUCTURE?

A. Mr. D'Ascendis stated that the capital structure is based on the actual capital structure of CUPA's parent, CORIX Regulated Utilities, Inc. (CRU) at December 31, 2020 and is reasonable and consistent with the range of capital structures maintained by his Utility Proxy Group (CUPA Statement No. 5, p. 13, lines 10-23).

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY'S CAPITAL STRUCTURE?

A. I recommend using the Company's claimed capital structure as presented in the table above.

Q. WHAT IS THE BASIS FOR YOUR CAPITAL STRUCTURE RECOMMENDATION?

A. I recommend using the Company's claimed capital structure as it falls within the

range of my proxy group's 2020 capital structures. The 2020 range consists of long-term debt ratios ranging from 44.41% to 59.33% and common equity ratios ranging from 40.67% to 55.25%, with a five-year average of 46.88% for long-term debt and 53.05% for common equity (I&E Exhibit No. 2, Schedule 2).

COST OF LONG-TERM DEBT

Q. WHAT IS THE COMPANY'S CLAIMED COST RATE OF LONG-TERM DEBT?

A. The Company's claimed long-term debt cost rate is 5.05% for the FPFTY (CUPA Statement No. 5, p. 14, lines 3-4).

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE COMPANY'S COST RATE OF LONG-TERM DEBT?

A. I recommend using the Company's long-term debt cost rate of 5.05%.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO USE THE COMPANY'S COST RATE OF LONG-TERM DEBT?

A. The Company's cost rate of long-term debt is reasonable, as it is representative of the industry. It falls within my proxy group's implied long-term debt cost range of 2.69% to 5.67%, with an average implied long-term debt cost of 4.04% (I&E Exhibit No. 2, Schedule 3). Therefore, I recommend the Company's cost rate of long-term debt be used.

1 **COST OF COMMON EQUITY**

2 **COMMON METHODS**

3 **Q. WHAT METHODS ARE COMMONLY PRESENTED BY UTILITIES IN**

4 **DETERMINING THE COST OF COMMON EQUITY?**

5 A. Four methods commonly presented to estimate the cost of common equity are the

6 Discounted Cash Flow (DCF), the Capital Asset Pricing Model (CAPM), the Risk

7 Premium (RP) Method, and the Comparable Earnings (CE) Method.

8

9 **Q. WHAT IS THE THEORETICAL BASIS FOR THE DCF METHOD?**

10 A. The DCF method is the "dividend discount model" of financial theory, which

11 maintains that the value (price) of any security or commodity is the discounted

12 present value of all future cash flows. The DCF method assumes that investors

13 evaluate stocks in the classical economic framework, which maintains that the value

14 of a financial asset is determined by its earning power, or its ability to generate future

15 cash flows.

16

17 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CAPM?**

18 A. The CAPM describes the relationship of a stock's investment risk and its market rate

19 of return. It identifies the rate of return investors expect so that it is comparable with

20 returns of other stocks of similar risk. This method hypothesizes that the investor-

21 required return on a company's stock is equal to the return on a "risk free" asset plus

22 an equity premium reflecting the company's investment risk. In the CAPM, two

23 types of risk are associated with a stock: (1) firm-specific risk (unsystematic risk);

and (2) market risk (systematic risk), which is measured by a firm's beta. The CAPM allows for investors to receive a return only for bearing systematic risk. Unsystematic risk is assumed to be diversified away, and therefore, does not earn a return.

Q. WHAT IS THE THEORETICAL BASIS FOR THE RP METHOD?

A. The theoretical basis for the RP method is a simplified version of the CAPM. The RP method's theory is that common stock is riskier than debt and, thus, investors require a higher expected return on stocks than bonds. In the RP approach, the cost of equity is made up of the cost of debt and a risk premium. While the CAPM uses the market risk premium, it also directly measures the systematic risk of a company group through the use of beta. The RP method does not measure the specific risk of a company.

Q. WHAT IS THE THEORETICAL BASIS FOR THE CE METHOD?

A. The CE method utilizes the concept of "opportunity cost." This means that investors will likely dedicate their capital to the investment offering the highest return with similar risk to alternative investments. Unlike the DCF, CAPM, and the RP methods, the CE method is not market-based and relies upon historic accounting data. The most problematic issue with the CE method is determining what constitutes comparable companies.

1 **Q. WHAT METHOD DO YOU RECOMMEND USING TO DETERMINE AN**
2 **APPROPRIATE COST OF COMMON EQUITY FOR THE COMPANY?**
3 A. I recommend using the DCF method as the primary method to determine the cost of
4 common equity. I also recommend using the results of the CAPM as a comparison to
5 the DCF results. My recommendation is consistent with the methodology historically
6 used by the Commission in base rate proceedings, even as recently as 2017, 2018,
7 2020, and 2021.[1]
8
9 **Q. PLEASE EXPLAIN WHY YOU CHOSE TO USE THE DCF AND CAPM IN**
10 **YOUR ANALYSIS.**
11 A. I have used the DCF as the primary method for several reasons. First, the DCF is
12 appealing to investors as it is based upon the concept that the receipt of dividends in
13 addition to expected appreciation is the total return requirement determined by the
14 market.[2] Second, the use of a growth rate and expected dividend yield are also
15 strengths of the DCF, as this recognizes the time value of money and is forward-
16 looking. Third, the use of the utilities' own, or in this case, the proxy group's stock
17 prices and growth rates directly in the calculation also causes the DCF to be industry

---

[1] *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company;* Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.;* Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131; *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

[2] David C. Parcell, "The Cost of Capital – A Practitioner's Guide," 2010 Edition, p. 151.

1 and company specific. Finally, the DCF method is the superior method for
2 determining the rate of return for the current economic market because it measures
3 the cost of equity directly.
4 I have included a CAPM analysis as a comparison because the CAPM and the
5 DCF include inputs that allow the results to be specific to the utility industry,
6 although the CAPM is far less responsive to changes in the industry than the DCF.
7 The CAPM is based on the performance of U.S. Treasury bonds and the performance
8 of the market as measured through the S&P 500 and is company-specific only
9 through the use of beta. Beta reflects a stock's volatility relative to the overall market,
10 thereby incorporating an industry-specific aspect to the CAPM, but only as a measure
11 of how reactive the industry is compared to the market as a whole. Although changes
12 in the utility industry are more likely to be accurately reflected in the DCF, which
13 uses the companies' actual prices, dividends, and growth rates, I have included the
14 results of my CAPM analysis because changes in the market, whether as a whole or
15 specific to the utility industry, affect the outcome of each method in different ways.
16 Although I have chosen to use the CAPM as a secondary method, it does have several
17 disadvantages and should not be used as a primary method.
18
19 **Q. EXPLAIN THE DISADVANTAGES OF THE CAPM.**
20 A. The CAPM, and the RP method by virtue of its similarities to the CAPM, give results
21 that indicate to an investor what the equity cost rate should be if current economic and
22 regulatory conditions are the same as those present during the historical period in
23 which the risk premiums were determined. This is because beta, which is the only

company-specific variable in the CAPM model, measures the *historical* volatility of a stock compared to the *historical* overall market return. Reliance on historical values is especially problematic now given the recent impact of the coronavirus on economic conditions. Although the CAPM and RP results can be useful to investors in making rational buy and sell decisions within their portfolios, the DCF method is the superior method for determining the rate of return for the current economic market and measuring the cost of equity directly. The CAPM and the RP methods are less reliable indicators because they measure the cost of equity indirectly and risk premiums vary depending on the debt and equity being compared. Also, regulators can never be certain that economic and regulatory conditions underlying the historical period during which the risk premiums were calculated are the same today or will be the same in the future.

Q. IS THERE ANY ACADEMIC EVIDENCE THAT QUESTIONS THE CREDIBILITY OF THE CAPM MODEL?

A. Yes. An article, "Market Place; A Study Shakes Confidence in the Volatile-Stock Theory," which appeared in the *New York Times* on February 18, 1992, summarized a CAPM study conducted by professors Eugene F. Fama and Kenneth R. French.[3] Their study examined the importance of beta, CAPM's risk factor, in explaining returns on common stock. In CAPM theory a stock with a higher beta should have a

[3] Berg, Eric N. "Market Place; A Study Shakes Confidence in the Volatile-Stock Theory" *The New York Times*, 18 Feb 1992: *nytimes.com* Web. 23 Mar 2016.

higher expected return. However, they found that the model did not do well in predicting actual returns and suggested the use of more elaborate multi-factor models.

A more recent article, "The Capital Asset Pricing Model: Theory and Evidence," which appeared in the *Journal of Economic Perspectives,* states that "the attraction of the CAPM is that it offers powerful and intuitively pleasing predictions about how to measure risk and the relation between expected return and risk. Unfortunately, the empirical record of the model is poor - poor enough to invalidate the way it is used in applications."[4] As a result, I conclude that the CAPM's relevance to the investment decision making process does not carry over into the regulatory rate setting process.

Q. PLEASE EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE RP METHOD FROM YOUR ANALYSIS.

A. The RP method is excluded because it is a simplified version of the CAPM and is subject to the same faults listed above. Additionally, unlike the CAPM, the RP method does not recognize company-specific risk through beta.

Q. EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE CE METHOD FROM YOUR ANALYSIS.

A. The CE method is excluded because the choice of which companies are comparable is highly subjective, and it is debatable whether historic accounting values are

[4] Fama, Eugene F. and French, Kenneth R., "The Capital Asset Pricing Model: Theory and Evidence." *Journal of Economic Perspectives* (2004): Volume 18, Number 3, pp. 25-46.

representative of the future. Moreover, its historical usage in this regulatory forum has been minimal.

SUMMARY OF THE COMPANY'S RESULTS

Q. WHAT ARE THE RESULTS OF THE COMPANY'S COST OF EQUITY ANALYSES?

A. Mr. D'Ascendis used the DCF, CAPM, and the RP methods in analyzing the Company's cost of equity. Mr. D'Ascendis also used the Predictive Risk Premium Method (PRPM) and the Empirical Capital Asset Pricing Model (ECAPM) in forming his recommendations under the RP and the CAPM methods, respectively. Mr. D'Ascendis applied these methods using his proxy group of regulated water utilities and averaged the results of the methods for his non-price regulated proxy group. Mr. D'Ascendis then listed the results for each method for the regulated utility group and the average of the median and mean of the results of the methods for the non-price regulated group. Finally, he recommended that the cost of equity be increased by 100 basis points due to the Company's small size. Ultimately, Mr. D'Ascendis opined that a cost of equity of 10.35% is warranted (CUPA Statement No. 5, p. 5, line 17 through p. 7, line 3 and CUPA Schedule DWD-1, p. 2).

I&E RECOMMENDATION

Q. WHAT IS YOUR RECOMMENDED COST OF COMMON EQUITY FOR THE COMPANY?

A. Based upon my analysis, I recommend a cost of common equity of 9.24% for the Company (I&E Exhibit No. 2, Schedule 1).

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on the use of the DCF method. As explained below, I used my CAPM result only to present to the Commission a comparison to my DCF results. My DCF analysis uses a spot dividend yield, a 52-week dividend yield, and earnings growth forecasts.

<u>DISCOUNTED CASH FLOW</u>

Q. PLEASE EXPLAIN YOUR DCF ANALYSIS.

A. My analysis employs the constant growth DCF model as portrayed in the following formula:

$$K = D_1/P_0 + g$$

Where:

K	=	Cost of equity
D_1	=	Dividend expected during the year
P_0	=	Current price of the stock
g	=	Expected growth rate

When a forecast of D_1 is not available, D_0 (the current dividend) must be adjusted by one half of the expected growth rate to account for changes in the dividend paid in period one. As forecasts for each company in my proxy group were available from Value Line, no dividends were adjusted for the purpose of my analysis.

Q. PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELDS USED IN YOUR DCF ANALYSIS.

A. A representative dividend yield must be calculated over a time frame that avoids the problems of both short-term anomalies and stale data series. For my DCF analysis, the dividend yield calculation places equal emphasis on the most recent spot and the 52-week average dividend yields. The following table summarizes my dividend yield computations for the proxy group (I&E Exhibit No. 2, Schedule 4):

Seven-Company Proxy Group	Dividend Yield
Spot	1.87%
52-week average	1.96%
Average	1.91%

Q. WHAT INFORMATION DID YOU RELY UPON TO DETERMINE YOUR EXPECTED GROWTH RATE?

A. I have used five-year projected growth rate estimates from Value Line, Yahoo! Finance, Zacks, and Morningstar.

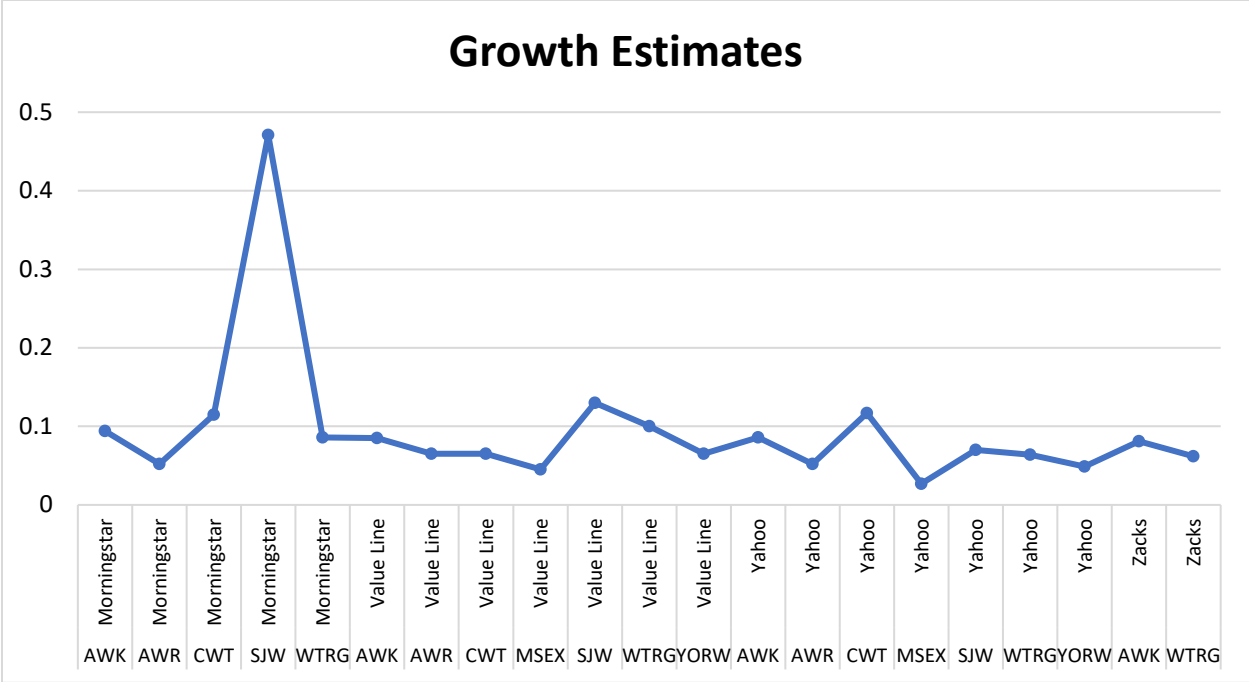
Q. WHAT WERE THE RESULTS OF YOUR FORECASTED EARNINGS GROWTH RATES?

A. The expected average growth rates for the seven-company proxy group ranged from 2.70% to 47.10% with an overall average of 9.09%. For the purpose of determining the growth estimate, I subsequently eliminated SJW Group's Morningstar growth

estimate of 47.10% to determine a new adjusted average of 7.33% (I&E Exhibit No. 2, Schedule 5).

Q. WHY DID YOU ELIMINATE SJW GROUP'S MORNINGSTAR PROJECTED GROWTH RATE?

A. While the use of a proxy group largely smooths out various anomalies, Morningstar's growth projection for SJW Group is extremely inconsistent and would have an unreasonable and unwarranted impact on my DCF analysis. This would adversely affect my recommendation for the Company's cost of common equity because it is harmful to ratepayers by creating an unjustified increase in return on equity and consequently pressures rates upward, which is not in the public interest. Morningstar's estimate of 47.10% is more than five times higher and greater than four standard deviations over the originally calculated 9.09% overall average. Furthermore, the estimate is more than six times higher than the average of the remaining estimates. Additionally, I was unable to find any explanation or justification of why this estimate was so high. The following chart illustrates just how much of an outlier this result is:



Q. WHAT IS THE RESULT OF YOUR DCF ANALYSIS BASED ON YOUR RECOMMENDED DIVIDEND YIELD AND GROWTH RATE?

A. The results of my DCF analysis are calculated as follows (I&E Exhibit No. 2, Schedule 6):

K	=	D_1/P_0	+	g
9.24%	=	1.91%	+	7.33%

<u>CAPITAL ASSET PRICING MODEL</u>

Q. PLEASE EXPLAIN YOUR CAPM ANALYSIS.

A. My analysis employs the traditional CAPM as portrayed in the following formula:

$$K = R_f + \beta(R_m - R_f)$$

Where:

K	=	Cost of equity
R_f	=	Risk-free rate of return
R_m	=	Expected rate of return on the overall stock market
β	=	Beta measures the systematic risk of an asset

Q. WHAT IS BETA AS EMPLOYED IN YOUR CAPM ANALYSIS?

A. Beta is a measure of the systematic risk of a stock in relation to the rest of the stock market. A stock's beta is estimated by calculating the linear regression of a stock's return against the return on the overall stock market. The beta of a stock with a price pattern identical to that of the overall stock market will equal one. A stock with a price movement that is greater than the overall stock market will have a beta that is greater than one and would be described as having more investment risk than the market. Conversely, a stock with a price movement that is less than the overall stock market will have a beta of less than one and would be described as having less investment risk than the market.

Q. HOW DID YOU DETERMINE YOUR BETA FOR YOUR CAPM ANALYSIS?

A. In estimating an equity cost rate for my proxy group of seven water companies, I used the average of the betas for the companies as provided in the Value Line Investment Survey. The average beta for my proxy group is 0.78 (I&E Exhibit No. 2, Schedule 7).

1 **Q. WHAT RISK-FREE RATE OF RETURN HAVE YOU USED FOR YOUR**
2 **FORECASTED CAPM ANALYSIS?**
3 A. I used the risk-free rate of return (R_f) from the projected yield on 10-year Treasury
4 Notes. While the yield on the short-term T-Bill is a more theoretically correct
5 parameter to represent a risk-free rate of return, it can be extremely volatile. The
6 volatility of short-term T-Bills is directly influenced by Federal Reserve policy. At
7 the other extreme, the 30-year Treasury Bond exhibits more stability but is not risk-
8 free. Long-term Treasury Bonds have substantial maturity risk associated with
9 market risk and the risk of unexpected inflation. Long-term treasuries normally offer
10 higher yields to compensate investors for these risks. As a result, I used the yield on
11 the 10-year Treasury Note because it mitigates the shortcomings of the other two
12 alternatives. Additionally, the Commission has recently recognized the 10-year
13 Treasury Note as the superior measure of the risk-free rate of return.[5] The forecasted
14 yield on the 10-year Treasury Note, as can be seen in Blue Chip Financial Forecasts,
15 is expected to be between 1.80% and 2.10% from the third quarter of 2021 through
16 the third quarter of 2022, and it is forecasted to be 2.90% from 2023-2027. For my
17 forecasted CAPM analysis, I used 2.12%, which is the average of all the yield
18 forecasts I observed (I&E Exhibit No. 2, Schedule 8).

[5] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 99.

Q. HOW DID YOU DETERMINE THE RETURN ON THE OVERALL STOCK MARKET IN YOUR FORECASTED CAPM ANALYSIS?

A. To arrive at a representative expected return on the overall stock market, I observed Value Line's 1700 stocks and the S&P 500. Value Line expects its universe of 1700 stocks to have an average yearly return of 8.48% over the next three to five years based on a forecasted dividend yield of 1.70% and a yearly index appreciation of 30%. The S&P 500 index is expected to have an average yearly return of 14.87% over the next five years based upon Barron's forecasted dividend yield of 1.47% and Morningstar's average expected increase in the S&P 500 index of 13.40% (I&E Exhibit No. 2, Schedule 9).

Q. WHAT IS THE EXPECTED RETURN ON THE OVERALL STOCK MARKET BASED ON YOUR FORECASTED ANALYSIS?

A. The expected return on the overall market is 11.68% for my forecasted analysis (I&E Exhibit No. 2, Schedule 9).

Q. WHAT IS THE COST OF EQUITY RESULT FROM YOUR CAPM ANALYSIS?

A. The result of my analysis is as follows (I&E Exhibit No. 2, Schedule 10):

$$K = R_f + \beta(R_m - R_f)$$

$$9.56\% = 2.12\% + 0.78\ (11.68\% - 2.12\%)$$

1 **CRITIQUE OF MR. D'ASCENDIS' PROPOSED COST OF EQUITY**

2 **Q. DO YOU AGREE WITH MR. D'ASCENDIS' PROPOSED COST OF**
3 **EQUITY?**

4 A. No. I disagree with Mr. D'Ascendis' proposed cost of equity analysis for several
5 reasons. First, I disagree with the weights given to the results of his DCF, CAPM,
6 RP, PRPM, and ECAPM analyses in his recommendation. Second, I disagree with
7 the use of a proxy group of companies that are not regulated water utilities which was
8 used in the calculation of the Company's cost of equity. Third, I disagree with his
9 inclusion of a size adjustment. Finally, I disagree with his reliance on the 30-year
10 Treasury Bond for his risk-free rate.

11

12 **WEIGHTS GIVEN TO THE CAPM AND RP METHODS**

13 **Q. DO YOU AGREE WITH MR. D'ASCENDIS' RELIANCE ON THE CAPM**
14 **AND RP MODELS?**

15 A. No. While I am not opposed to providing the Commission the results of the CAPM
16 for a point of comparison to the results of the DCF calculation, I am opposed to
17 giving the CAPM and RP considerable weight. For the reasons discussed above,
18 including my reference to recent Commission orders, it is not appropriate to give the
19 CAPM and RP models similar weight to the DCF as Mr. D'Ascendis has done in
20 creating his recommended cost of equity range (CUPA Statement No. 5, p. 6, line 7).
21 As discussed above, the CAPM measures the cost of equity indirectly and can be
22 manipulated by the time period chosen. Since the RP is a simplified version of the
23 CAPM, it suffers these same flaws. Also, as discussed in more detail below, the

results of the lesser-used ECAPM and PRPM models should also be rejected. I have not used the ECAPM because it only weights the results of the CAPM in order to flatten the Security Market Line, but it does not correct the previously discussed problems with the CAPM. I have not used Mr. D'Ascendis' Predicative Risk Premium Model, because it is not a widely accepted method and investors must have a statistical software package to use the PRPM.

PREDICTIVE RISK PREMIUM MODEL

Q. WHAT IS THE PREDICTIVE RISK PREMIUM MODEL?

A. The PRPM is a method published in August 2011 by Pauline M. Ahern, Frank J. Hanley, and Richard A. Michelfelder in the article *New Approach to Estimating the Cost of Common Equity Capital for Public Utilities.*[6] Mr. D'Ascendis' PRPM requires Eviews© statistical software to compute (CUPA Statement No. 5, pp. 18-19).

Q. DO YOU AGREE WITH MR. D'ASCENDIS' USE OF THE PRPM?

A. No. Mr. D'Ascendis' PRPM is not a commonly used method and cannot be evaluated or recreated without the software. I am also unaware of any state that has accepted the use of the PRPM. Finally, the PRPM does not solve the problem of the RP method because it is still an indirect measure of the cost of equity, and the PRPM

[6] Ahern, Pauline M., Hanley, Frank J., Michelfelder, Richard A. (December 2011, Volume 40, Issue 3). *New Approach to Estimating the Cost of Common Equity Capital for Public Utilities*. Journal of Regulatory Economics, pp. 261-278.

complicates the RP method with the introduction of a measurement that requires the use of specialized software.

EMPIRICAL CAPITAL ASSET PRICING MODEL

Q. WHAT DOES MR. D'ASCENDIS CLAIM IS THE BASIS FOR HIS USE OF THE ECAPM?

A. Mr. D'Ascendis opined that the Security Market Line (SML) defined by the CAPM is not as steeply sloped as the predicted SML (CUPA Statement No. 5, p. 29, lines 16-19). Mr. D'Ascendis used a formula to account for the systematic risk that is not accounted for with beta in the CAPM formula. This methodology, called ECAPM, uses a factor, alpha, to account for the additional systematic risk not captured by beta.

Q. DO YOU AGREE WITH MR. D'ASCENDIS' USE OF THE ECAPM?

A. No. Although some studies indicate that the CAPM does not properly define the SML, the degree to which the CAPM would require adjustment varies widely and is dependent on the inputs used to determine the difference between the SML and actual historical figures. I was unable to find the value of alpha Mr. D'Ascendis has chosen to use to adjust the SML in either Mr. D'Ascendis' testimony or exhibits. The ECAPM attempts to add a factor, alpha, to "correct" the perceived underestimation of the cost of capital for betas lower than 1 but as identified in *New Regulatory Finance* by Roger A. Morin, estimations for alpha range from -9.61% to 13.56%.[7] This large

[7] Morin, Roger A. (2006). *New Regulatory Finance.* Vienna, VA: Public Utilities Reports, Inc.

range demonstrates the difficulty of accurately and precisely measuring the difference between what the CAPM is estimating and actual results. The use of the ECAPM in estimating the cost of capital does not increase the validity of the result but merely adds another difficult to measure factor to the CAPM. The CAPM's attempts to measure a variable that changes; the difference between a risk-free rate and the market is not a constant factor. The ECAPM attempts to correct the CAPM's inability to accurately predict the cost of capital but does so through an additional factor that corrects none of the underlying problems of the model.

<u>DOMESTIC NON-PRICE REGULATED COMPANIES</u>

Q. DOES MR. D'ASCENDIS RELY ON ANY MARKET DATA INPUTS SPECIFIC TO COMPANIES THAT ARE NOT REGULATED UTILITIES?

A. Yes. Mr. D'Ascendis asserted that in the *Hope* and *Bluefield* cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Consequently, he assembled a proxy group consisting of 26 non-price regulated firms which he asserts are comparable in terms of total risk to the Utility Proxy Group (CUPA Statement No. 5, pp. 35-36). After forming his proxy group of 26 non-price regulated firms, Mr. D'Ascendis calculated common equity costs with data inputs specific to these companies using the DCF, RP, and CAPM methods (CUPA Schedule DWD-7). The average of the mean and median results of these analyses of 11.08% was incorporated into Mr. D'Ascendis' final calculation of the Company's return on equity of 10.35% (CUPA Schedule DWD-1, p. 2).

Q. DO YOU AGREE WITH MR. D'ASCENDIS' APPROACH OF USING THE MARKET DATA OF NON-UTILITY COMPANIES TO CALCULATE CUPA'S RETURN ON EQUITY?

A. No. The process of choosing a proxy group of non-utility companies similar in risk to CUPA is highly speculative and subjective. In effect, Mr. D'Ascendis blends the CE approach into the DCF, RP, and CAPM models. As stated earlier, the Commission has ruled on the use of the CE approach, specifically, the use of non-utility companies in comparable groups, and stated:

> The use of nonregulated companies as a comparable group for regulated firms requires numerous unsupportable assumptions which results in a highly speculative finding.[8]

If the non-price regulated company proxy group is truly similar in total risk to CUPA, I would expect to see similar results in the calculation of the DCF, RP, and CAPM between the Water Utility and Non-Price Regulated Company proxy groups used by Mr. D'Ascendis. However, the Non-Price Regulated Company proxy groups results were higher for all three methods. This clearly demonstrates the Commission's ruling that "the use of non-regulated companies as a comparable group for regulated firms …. results in a highly speculative finding."

[8] *Pennsylvania Public Utility Commission v. Philadelphia Electric Co.* 33 PUR 4th 319, 341 (Pa PUC 1980).

1 **SIZE ADJUSTMENT**

2 **Q. WHAT SIZE ADJUSTMENT HAS MR. D'ASCENDIS PROPOSED?**

3 A. Mr. D'Ascendis added 100 basis points to his cost of common equity because he
4 opined that smaller companies are less able to cope with significant events affecting
5 sales, revenues, or earnings. He further stated that the loss of revenue from a few
6 larger customers would have a greater effect on a small company. Mr. D'Ascendis
7 relied upon technical literature including Duff & Phelps' 2020 Valuation Handbook –
8 U.S. Guide to Cost of Capital (D&P – 2020), a Fama and French study entitled "The
9 Capital Asset Pricing Model: Theory & Evidence" and Professor Eugene Brigham's
10 textbook entitled "Fundamentals of Finance Management." Mr. D'Ascendis
11 quantified his size adjustment based on size premiums for portfolios of New York
12 Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked
13 by deciles for the 1926 to 2019 period. While Mr. D'Ascendis' proxy group
14 companies fell in the 4th decile, he asserted that CUPA fell in the 10th decile for size.
15 He stated that while this indicates an upward equity risk premium adjustment of 426
16 basis points, he chose an upward adjustment of 100 basis points (CUPA Statement
17 No. 5, pp. 39-44).
18

19 **Q. DO YOU AGREE WITH MR. D'ASCENDIS' SIZE ADJUSTMENT?**

20 A. No. Mr. D'Ascendis' proposed size adjustment is unnecessary because the technical
21 literature he cited supporting investment adjustments related to the size of a company
22 is not specific to the utility industry; therefore, it has no relevance in this proceeding.

Q. IS THERE ACADEMIC EVIDENCE THAT SUPPORTS YOUR CONCLUSION THAT THE SIZE ADJUSTMENT FOR RISK IS NOT APPLICABLE TO UTILITY COMPANIES?

A. Yes. In the article "Utility Stocks and the Size Effect: An Empirical Analysis," Dr. Annie Wong concludes:

> The objective of this study is to examine if the size effect exists in the utility industry. After controlling for equity values, there is some weak evidence that firm size is a missing factor from the CAPM for the industrial but not for utility stocks. This implies that although the size phenomenon has been strongly documented for the industriales, the findings suggest that there is no need to adjust for the firm size in utility rate regulation.[9]

CUPA has presented no evidence to support application of a non-utility study regarding a size adjustment for risk to a utility setting. Absent any credible article to refute Dr. Wong's findings, Mr. D'Ascendis' size adjustment to his cost of common equity results should be rejected. Additionally, and more importantly, the Commission has recently rejected the application of a size adjustment to the cost of equity calculation.[10]

<u>RISK-FREE RATE</u>

Q. WHAT RISK-FREE RATE DID MR. D'ASCENDIS USE IN HIS RP AND CAPM MODELS?

A. Mr. D'Ascendis calculated his risk-free rate of 2.48% by using the 30-year Treasury Bonds (CUPA Statement No. 5, p. 32, lines 6-12).

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[9] Dr. Annie Wong, "Utility Stocks and the Size Effect: An Empirical Analysis," *Journal of Midwest Finance Association* 1993, pp. 95-101.

[10] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 100.

Q. DO YOU AGREE WITH MR. D'ASCENDIS' USE OF THE 30-YEAR TREASURY BOND TO DETERMINE THE RISK-FREE RATE?

A. No. As discussed above, long-term Treasury Bonds have substantial maturity risk associated with the market risk and the risk of unexpected inflation and normally offer higher yields to compensate investors for these risks. Using the 10-year Treasury Note is more appropriate to balance the short-term volatility risk and the long-term inflation risk.

OVERALL RATE OF RETURN RECOMMENDATION

Q. WHAT IS THE COMPANY'S PROPOSED OVERALL RATE OF RETURN?

A. The Company's proposed overall rate of return is 7.58% (CUPA Statement No. 5, p. 5, line 6).

Q. WHAT IS I&E'S RECOMMENDED OVERALL RATE OF RETURN?

A. I recommend an overall rate of return for the Company of 7.05% (I&E Exhibit No. 2, Schedule 1).

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

PROFESSIONAL AND EDUCATIONAL EXPERIENCE
CHRISTOPHER KELLER

Professional Experience

January 2014 to Present
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania
Bureau of Investigation & Enforcement

September 2008 to January 2014
Insurance Company Financial Analyst
Pennsylvania Insurance Department, Harrisburg, Pennsylvania
Bureau of Licensing & Financial Analysis

Education and Training

FAI Utility Finance and Accounting for Financial Professionals, Boston, MA
May 21-23, 2014

York College of Pennsylvania, York, Pennsylvania
Master of Business Administration, Finance Concentration, 2008
Bachelor of Science, Accounting, 2006

Testimony Submitted

I have testified and/or submitted testimony in the following proceedings:

- Docket No. R-2021-3025652 – UGI Utilities, Inc. – Gas Division (1307(f)) (proceeding ongoing)
- Docket No. R-2021-3024750 – Duquesne Light Company (O&M and ROR) (proceeding ongoing)
- Docket No. R-2021-3024296 – Columbia Gas of Pennsylvania, Inc. (ROR) (proceeding ongoing)
- Docket No. R-2020-3018929 – PECO Energy Company – Gas Division (ROR)
- Docket No. P-2020-3020914 – Twin Lakes Utilities, Inc. (529 Proceeding) (proceeding ongoing)
- Docket No. R-2020-3018835 – Columbia Gas of Pennsylvania, Inc. (ROR)
- Docket No. R-2020-3019680 – UGI Utilities, Inc. (1307(f))
- Docket No. P-2020-3019356 – PPL Electric Utilities Corporation (DSP)
- Docket No. R-2019-3015162 – UGI Utilities, Inc. – Gas Division (ROR)
- Docket No. R-2019-3010955 – City of Lancaster – Sewer Fund (O&M)
- Docket No. R-2019-3009647 – UGI Utilities, Inc. – Gas Division (1307(f))
- Docket No. R-2018-3006818 – Peoples Natural Gas Company LLC (O&M)
- Docket No. R-2018-3000124 – Duquesne Light Company (O&M)

Testimony Submitted (Continued)

I have testified and/or submitted testimony in the following proceedings:

- Docket No. R-2018-3001631 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2018-3001632 – UGI Penn Natural Gas, Inc. (1307(f))
- Docket No. R-2018-3001633 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2018-2645938 – Philadelphia Gas Works (1307(f))
- Docket No. P-2017-2637855 – Metropolitan Edison Company (DSP)
- Docket No. P-2017-2637857 – Pennsylvania Electric Company (DSP)
- Docket No. P-2017-2637858 – Pennsylvania Power Company (DSP)
- Docket No. P-2017-2637866 – West Penn Power Company (DSP)
- Docket No. R-2017-2602627 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2017-2602638 – UGI Utilities, Inc. (1307(f))
- Docket No. R-2017-2586783 – Philadelphia Gas Works (O&M)
- Docket No. R-2017-2587526 – Philadelphia Gas Works (1307(f))
- Docket No. I-2016-2526085 – Delaware Sewer Company (529 Proceeding)
- Docket No. R-2016-2531550 – Citizens' Electric Company (O&M)
- Docket No. R-2016-2531551 – Wellsboro Electric Company (O&M)
- Docket No. R-2016-2537349 – Metropolitan Edison Company (CWC and CAP)
- Docket No. R-2016-2537352 – Pennsylvania Electric Company (CWC and CAP)
- Docket No. R-2016-2537355 – Pennsylvania Power Company (CWC and CAP)
- Docket No. R-2016-2537359 – West Penn Power Company (CWC and CAP)
- Docket No. R-2016-2543311 – UGI Central Penn Gas, Inc. (1307(f))
- Docket No. R-2015-2518438 – UGI Utilities, Inc. – Gas Division (CWC and USP)
- Docket No. P-2015-2511333 – Metropolitan Edison Company (DSP)
- Docket No. P-2015-2511351 – Pennsylvania Electric Company (DSP)
- Docket No. P-2015-2511355 – Pennsylvania Power Company (DSP)
- Docket No. P-2015-2511356 – West Penn Power Company (DSP)
- Docket No. R-2015-2468056 – Columbia Gas of Pennsylvania, Inc. (O&M)
- Docket No. P-2014-2404341 – Delaware Sewer Company (529 Investigation)
- Docket No. R-2014-2452705 – Delaware Sewer Company (O&M)
- Docket No. R-2014-2428304 – Borough of Hanover – Water (O&M)
- Docket No. R-2014-2419774 – Wellsboro Electric Company (Customer Choice Support Charge)
- Docket No. R-2014-2420279 – UGI Central Penn Gas, Inc. (1307(f))

Assisted with the Following Cases

- Docket No. R-2017-2631441 – Reynolds Water Company (ROR)
- Docket No. R-2016-2580030 – UGI Penn Natural Gas, Inc. (ROR)
- Docket No. R-2014-2462723 – United Water Pennsylvania (CWC)
- Docket No. R-2014-2428742 – West Penn Power Company (CWC)
- Docket No. R-2014-2428743 – Pennsylvania Electric Company (CWC)
- Docket No. R-2014-2428744 – Pennsylvania Power Company (CWC)
- Docket No. R-2014-2428745 – Metropolitan Edison Company (CWC)
- Docket No. R-2013-2397353 – Pike County Light & Power Company (Gas) (O&M)
- Docket No. R-2013-2397237 – Pike County Light & Power Company (Electric) (O&M)

I&E Exhibit No. 2
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA – WASTEWATER DIVISION

Docket No. R-2021-3025207

Exhibit to Accompany

the

Direct Testimony

of

Christopher Keller

Bureau of Investigation and Enforcement

Concerning:

Rate of Return

I&E
Summary of Cost of Capital

Type of Capital	Ratio	Cost Rate	Weighted Cost
Community Utilities of Pennsylvania Inc. (Wastewater Services)			
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.24%	4.41%
Total	100.00%		7.05%

Proxy Group Capital Structure

	2020		2019		2018		2017		2016		Average
American Water Works											
Long-term Debt	$ 9,414.000	59.33%	$ 8,733.000	58.79%	$ 7,576.000	56.37%	$ 6,498.000	54.68%	$ 5,759.000	52.46%	56.33%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	6,454.000	40.67%	6,121.000	41.21%	5,864.000	43.63%	5,385.000	45.32%	5,218.000	47.54%	43.67%
	15,868.000	100.00%	14,854.000	100.00%	13,440.000	100.00%	11,883.000	100.00%	10,977.000	100.00%	100.00%
American States Water Co											
Long-term Debt	584.184	47.66%	492.735	45.03%	376.587	40.28%	321.039	37.73%	320.981	39.37%	42.01%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	641.673	52.34%	601.530	54.97%	558.223	59.72%	529.945	62.27%	494.297	60.63%	57.99%
	1,225.857	100.00%	1,094.265	100.00%	934.810	100.00%	850.984	100.00%	815.278	100.00%	100.00%
California Water Service Group											
Long-term Debt	794.968	46.32%	799.682	50.63%	710.027	49.30%	515.793	42.65%	531.745	44.64%	46.71%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	921.344	53.68%	779.906	49.37%	730.157	50.70%	693.462	57.35%	659.471	55.36%	53.29%
	1,716.312	100.00%	1,579.588	100.00%	1,440.184	100.00%	1,209.255	100.00%	1,191.216	100.00%	100.00%
Middlesex Water Co											
Long-term Debt	278.286	44.41%	236.509	42.05%	152.851	37.83%	139.045	37.51%	134.538	37.85%	39.93%
Preferred Stock	2.084	0.33%	2.084	0.37%	2.433	0.60%	2.433	0.66%	2.436	0.69%	0.53%
Common Equity	346.208	55.25%	323.792	57.57%	248.787	61.57%	229.175	61.83%	218.437	61.46%	59.54%
	626.578	100.00%	562.385	100.00%	404.071	100.00%	370.653	100.00%	355.411	100.00%	100.00%
SJW Group											
Long-term Debt	1,287.580	58.40%	1,283.597	59.05%	431.424	32.67%	431.092	48.20%	433.335	50.68%	49.80%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	917.160	41.60%	889.984	40.95%	889.312	67.33%	463.209	51.80%	421.646	49.32%	50.20%
	2,204.740	100.00%	2,173.581	100.00%	1,320.736	100.00%	894.301	100.00%	854.981	100.00%	100.00%
Essential Utilties											
Long-term Debt	5,563.386	54.29%	2,954.972	43.23%	2,398.464	54.41%	2,007.753	50.63%	1,737.605	48.43%	50.20%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	4,683.877	45.71%	3,880.860	56.77%	2,009.364	45.59%	1,957.621	49.37%	1,850.068	51.57%	49.80%
	10,247.263	100.00%	6,835.832	100.00%	4,407.828	100.00%	3,965.374	100.00%	3,587.673	100.00%	100.00%
York Water Company											
Long-term Debt	123.573	46.31%	94.535	41.33%	93.328	42.51%	90.098	43.01%	84.609	42.59%	43.15%
Preferred Stock	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	0.00%
Common Equity	143.252	53.69%	134.185	58.67%	126.195	57.49%	119.405	56.99%	114.061	57.41%	56.85%
	266.825	100.00%	228.720	100.00%	219.523	100.00%	209.503	100.00%	198.670	100.00%	100.00%

Five-Year Average Capital Structure	
Long-term Debt	46.88%
Preferred Stock	0.08%
Common Equity	53.05%
	100.00%

Source: Compustat (data in millions)
April 2021

Accessed on June 25, 2021

	2020		
	Interest Charges	**Long-Term Debt**	**Debt Cost**
American Water Works	$ 408.00	$ 9,414.00	4.33%
American States Water Co	22.53	584.18	3.86%
California Water Service Group	45.05	794.97	5.67%
Middlesex Water Co	7.49	278.29	2.69%
SJW Group	58.39	1,287.58	4.53%
Essential Utilties	188.44	5,563.39	3.39%
York Water Company	4.71	123.57	3.81%
	Range:	**Low**	**2.69%**
		High	**5.67%**
		Average	**4.04%**

Source: Compustat
April 2021

Accessed on June 25, 2021

Dividend Yields of Seven Company Proxy Group

Company	American Water Works	American States Water Co	California Water Service Group	Middlesex Water Co	SJW Group	Essential Utilties	York Water Company
Symbol	*AWK*	*AWR*	*CWT*	*MSEX*	*SJW*	*WTRG*	*YORW*
Div	2.55	1.52	0.98	1.15	1.44	1.10	0.83
52-wk low	121.84	69.25	41.19	59.61	56.84	38.28	40.57
52-wk high	172.56	83.75	61.98	88.61	71.69	49.36	52.97
Spot Price	154.76	80.08	55.98	83.16	64.74	46.15	46.25
Spot Div Yield	1.65%	1.90%	1.75%	1.38%	2.22%	2.38%	1.79%
52-wk Div Yield	1.73%	1.99%	1.90%	1.55%	2.24%	2.51%	1.77%
Average	**1.69%**	**1.94%**	**1.83%**	**1.47%**	**2.23%**	**2.45%**	**1.78%**

	Average
Spot Div Yield	**1.87%**
52-wk Div Yield	**1.96%**
Average	**1.91%**

Source:	Barrons	June 25, 2021
	Value Line	April 9, 2021

Five-Year Growth Estimate Forecast for Proxy Group (Actual)

Company	Symbol	Yahoo	Zacks	Morningstar	Value Line	Average
		Source				
American Water Works	AWK	8.60%	8.10%	9.40%	8.50%	8.65%
American States Water Co	AWR	5.20%	NMF	5.20%	6.50%	5.63%
California Water Service Group	CWT	11.70%	NMF	11.50%	6.50%	9.90%
Middlesex Water Co	MSEX	2.70%	NMF	NMF	4.50%	3.60%
SJW Group	SJW	7.00%	NMF	47.10%	13.00%	22.37%
Essential Utilties	WTRG	6.40%	6.20%	8.60%	10.00%	7.80%
York Water Company	YORW	4.90%	NMF	NMF	6.50%	5.70%
Average						**9.09%**

Sources date:
(From Internet)
June 25, 2021

Five-Year Growth Estimate Forecast for Proxy Group (Adjusted)

Company	Symbol	Yahoo	Zacks	Morningstar	Value Line	Average
		Source				
American Water Works	AWK	8.60%	8.10%	9.40%	8.50%	8.65%
American States Water Co	AWR	5.20%	NMF	5.20%	6.50%	5.63%
California Water Service Group	CWT	11.70%	NMF	11.50%	6.50%	9.90%
Middlesex Water Co	MSEX	2.70%	NMF	NMF	4.50%	3.60%
SJW Group	SJW	7.00%	NMF	X	13.00%	10.00%
Essential Utilties	WTRG	6.40%	6.20%	8.60%	10.00%	7.80%
York Water Company	YORW	4.90%	NMF	NMF	6.50%	5.70%
Average						**7.33%**

Expected Market Cost Rate of Equity

Using Data for the Proxy Group of Seven Water Companies

5-Year Forecasted Growth Rates

	Time Period	Adjusted Dividend Yield	Growth Rate	Expected Return on Equity
		(1)	(2)	(3=1+2)
(1)	**52-Week Average** **Ending:** June 25, 2021	1.96%	7.33%	9.28%
(2)	**Spot Price** **Ending:** June 25, 2021	1.87%	7.33%	9.20%
(3)	**Average:**	**1.91%**	**7.33%**	**9.24%**

Sources: Value Line April 9, 2021
Barrons June 25, 2021

Company	Beta
American Water Works	0.85
American States Water Co	0.65
California Water Service Group	0.65
Middlesex Water Co	0.70
SJW Group	0.85
Essential Utilties	0.95
York Water Company	0.80
Average beta for CAPM	**0.78**

Source:
Value Line
April 9, 2021

Risk-Free Rate

Treasury note 10-yr Note	**Yield**
3Q 2021	1.80
4Q 2021	1.90
1Q 2022	2.00
2Q 2022	2.00
3Q 2022	2.10
2023-2027	2.90
Average	**2.12**

Source:
Blue Chip
June 1, 2021

Required Rate of Return on Market as a Whole Forecasted

	Dividend Yield	+	Growth Rate	=	Expected Market Return
Value Line Estimate	1.70%		6.78%	(a)	8.48%
S&P 500	1.47%	(b)	13.40%		14.87%
Average Expected Market Return				=	**11.68%**

(a) ((1+30%)^.25) -1) Value Line forecast for the 3 to 5 year index appreciation is 30%
(b) S&P 500 dividend yield multiplied by half the S&P 500 growth rate

S&P 500 Dividend Yield: 1.38%

Sources:

Value Line	6/25/2021
S&P 500 Dividend Yield (Barrons)	6/18/2021
S&P 500 Growth Rate (Morningstar)	6/25/2021

CAPM with Forecasted Return

Re	Required return on individual equity security
Rf	Risk-free rate
Rm	Required return on the market as a whole
Be	Beta on individual equity security

Re = Rf+Be(Rm-Rf)

Rf =	2.12
Rm =	11.68
Be =	0.78
Re =	**9.56**

Sources: Value Line April 9, 2021
Blue Chip June 1, 2021

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025207
Community Utilities of Pennsylvania Inc.	:	
Wastewater Division	:	

VERIFICATION OF THE
BUREAU OF INVESTIGATION AND ENFORCEMENT

I, Christopher Keller, on behalf of the Bureau of Investigation and Enforcement, hereby verify that the documents preliminarily identified as I&E Statement No. 2, I&E Exhibit No. 2, and I&E Statement No. 2-SR were prepared by me or under my direct supervision and control. Furthermore, the facts contained therein are true and correct to the best of my knowledge, information and belief and I expect to be able to prove the same at an Evidentiary Hearing in this matter. This Verification is made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

/s/ Christopher Keller

_____
Christopher Keller
Fixed Utility Financial Analyst
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Dated: September 8, 2021

I&E Statement No. 3
Witness: Esyan A. Sakaya

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC –
WASTEWATER DIVISION

Docket No. R-2021-3025207

Direct Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:

Test Year
Rate Base
Plant and Reporting Requirements
Plant Additions
Accrued Depreciation
Inflow and Infiltration
Public Input Hearing
Quality of Service
Rate Structure
Scale Back of Rates

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INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Esyan A. Sakaya. My business address is 400 North Street, Harrisburg, Pennsylvania 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission ("Commission") in the Bureau of Investigation and Enforcement ("I&E") as a Fixed Utility Valuation Engineer.

Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. My education and professional background are set forth in Appendix A, which is attached.

Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.

A. I&E is responsible for protecting the public interest in proceedings before the Commission. The I&E analysis in the proceeding is based on its responsibility to represent the public interest. This responsibility requires the balancing of the interests of ratepayers, the regulated utility, and the regulated community as a whole.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my testimony is to evaluate Community Utilities of Pennsylvania, Inc. Wastewater Division's ("CUPA" or "Company") request for an annual increase in

operating revenue of $998,705. My testimony will address issues related to the rate base, plant additions, accrued depreciation, reporting requirements, inflow and infiltration, public input hearing concerns, quality of service, rate structure, and the scale back of rates.

Q. DOES YOUR TESTIMONY INCLUDE AN EXHIBIT?

A. Yes. I&E Exhibit No. 3 contains schedules relating to my testimony.

Q. SUMMARIZE THE COMPANY'S FILING.

A. In this filing, the Company is proposing to consolidate rates so the customers in the former Penn Estates and Westgate sections (Consolidated system) pay the same rates as the customers in the recently acquired Tamiment system. In the Tamiment system, the Company is proposing to remove the usage charge and apply the same flat rate for Residential and Commercial customers. This change results in some customers receiving a decrease in their present charge or total bill. The Company did not provide a cost of service study to support different rates for different systems or different classes of customers.

<u>TEST YEAR</u>

Q. WHAT IS A TEST YEAR AND HOW IS IT USED BY A COMPANY IN A RATE PROCEEDING?

A. A test year is the twelve-month period over which a utility's costs and revenues are measured as the basis for setting prospective base rates. In order to meet its burden of

proof, a utility has the option of selecting either a historic test year ("HTY"), a future test year ("FTY"), or a Fully Projected Future Test Year ("FPFTY"). An HTY is a twelve-month period selected by a company that represents a recent full year of actual data. An FTY begins the day after the HTY ends and is determined using a combination of actual data and a projection of annualized and normalized estimates of future revenues and expenses and a corresponding measure of value at the end of that period. The FPFTY is defined as the twelve-month period that begins with the first month that the new rates will be placed into effect, after the application of the full suspension period permitted under Section 1308(d). The FPFTY is a shift from the fundamental ratemaking principle that a public utility should only be permitted to include projects in rate base and earn a reasonable return on its investments after they become "used and useful" for the utility's public service.

Q. WHAT TEST YEARS HAS THE COMPANY USED IN THIS PROCEEDING?

A. CUPA has selected the year ended December 31, 2020 as the HTY, the year ending December 31, 2021 as the FTY, and the year ending December 31, 2022 as the FPFTY (CUPA-WW St. No.2, p. 3).

Q. WHAT TEST YEAR HAS THE COMPANY BASED ITS REVENUE REQUIREMENT ON IN THIS PROCEEDING?

A. CUPA based its requested revenue requirement on the FPFTY ending December 31, 2022 (CUPA Supporting Data, Section 1, p. 2, and CUPA-WW St. No.2, p. 3)

1 **RATE BASE**

2 **Q. WHAT IS RATE BASE?**

3 A. Rate base is the depreciated original cost of a utility's investment in plant that is in
4 place to serve customers plus other additions and deductions that the Commission
5 determines to be necessary in order to keep the utility operating and providing safe
6 and reliable service to its customers.

7

8 **Q. HOW IS RATE BASE USED WITHIN THE RATEMAKING FORMULA?**

9 A. Rate base is one part of the financial equation used by the Commission to determine
10 the appropriate revenue that a utility is granted in a rate proceeding. The revenue
11 determination allows the utility to meet its expense obligations and gives it the
12 opportunity to earn the rate of return established by the Commission in a rate
13 proceeding. The equation used to determine the proper revenue requirement level is:

14 Revenue Requirement = (Rate Base x Rate of Return) + Operating Expenses +
15 Depreciation Expenses + Taxes.

16

17 **Q. HOW IS THE DEPRECIATED ORIGINAL COST OF PLANT-IN-SERVICE**
18 **AT THE END OF THE TEST YEAR DETERMINED?**

19 A. The depreciated original cost is equal to the original cost of the plant-in-service that is
20 used and useful in the provision of utility service to the customers <u>less</u> the
21 depreciation reserve as adjusted by other items such as salvage value and removal
22 costs. By using an FPFTY, the depreciated original cost of the plant in service is

computed by taking a "snapshot" look at the depreciated original cost value of used and useful utility plant estimated to be in service at the end of the FPFTY.

Q. WHAT OTHER ADDITIONS AND DEDUCTIONS TO THE DEPRECIATED ORIGINAL COST OF UTILITY PLANT ARE ALLOWED?

A. Some of the additions to the depreciated original cost of a company's investment in utility include materials and supplies, prepayments, and cash working capital. Some of the deductions include deferred income taxes and customer deposits. Some additions are applicable to a specific utility or utility type.

Q. WHAT IS THE COMPANY'S DEPRECIATED ORIGINAL COST AND WHAT ADDITIONS AND DEDUCTIONS DID THE COMPANY PROPOSE TO THE DEPRECIATED ORIGINAL COST?

A. The Company's claimed FPFTY depreciated original cost for CUPA's Wastewater Division is $13,302,087 (CUPA-WW Supporting Data, Section 1, p. 14).

The claimed additions to the Company's depreciated original cost are as follows:

1. Proforma Level of Plant;
2. Deferred Charges; and
3. Cash Working Capital.

The deductions to the depreciated original cost are:

1. Contributions in Aid of Construction;
2. Net Plant Acquisition Adjustment;

3. Customer Deposits; and

4. Accumulated Deferred Income Taxes.

Q. WHAT RATE BASE DID THE COMPANY CLAIM FOR THE FPFTY?

A. The Company is claiming total rate base of $13,302,087 (CUPA-WW Original filing, pp. 1-14 and I&E Ex. No. 3, Sch 1, col F, line 14).

Q. WHAT RATE BASE DO YOU RECOMMEND?

A. I recommend a rate base of $12,846,809 for CUPA's wastewater operations (I&E Ex. No. 3, Sch 1, col H, line 14). This is a reduction of $455,279 from the Company's original rate base of $13,302,087 shown on CUPA-WW Original filing page 1-14. My recommended rate base adjustments are explained below.

<u>PLANT ADDITIONS</u>

Q. WHAT IS THE COMPANY'S CLAIM FOR PLANT ADDITIONS?

A. The Company's total claim for plant additions in the FTY and FPFTY is $5,539,427 (CUPA-WW St. No. 3, p. 17). In addition to this, the Company also projected $266,618 of combined corresponding retirements in the FTY and FPFTY (CUPA-WW Supporting Schedule No. 9, line 54, and CUPA-WW Supporting Schedule No. 10, line 29). Therefore, the net plant additions are $5,272,944 (CUPA-WW Supporting Data, Section 1, p. 17).

Q. DID YOU ASK THE COMPANY TO PROVIDE DETAILS OF LARGER PROJECTS?

A. Yes. I asked the Company to provide a breakdown of the cost of each project, the starting date, and the in-service date for the 10 largest projects listed by the Company.

Q. DID THE COMPANY PROVIDE DETAILS SUFFICIENT TO JUSTIFY THE INCLUSION OF THE TEN LARGEST PROJECTS?

A. No. For two of the projects, the Company's response lacks the details sufficient to justify inclusion of these projects in the Company's FPFTY plant. Specifically, the Company's response to I&E-RB-7 concerning the $449,899 of treatment and disposal equipment (Account 380.40) projected to be installed in the FPFTY and the Company's response to I&E-RB-11 concerning the $104,741 of structures and improvements (Account 354.40) projected to be installed in the FPFTY lack the details needed to justify these projects (I&E Ex. No. 3, Sch. 4, pp. 1-2).

Q. WHAT DO YOU RECOMMEND CONCERNING THESE TWO PROJECTS?

A. I recommend that both projects be removed from the Company's projected FPFTY plant additions.

Q. WHY DO YOU RECOMMEND THAT THE $449,899 AND THE $104,741 PROJECTS NOT BE INCLUDED IN THE FPFTY PLANT BALANCE?

A. I recommended the removal of both the $449,899 and $104,741 from the projected FPFTY plant balance because of the lack of detail and specificity CUPA provided in

the responses to I&E RB-7 and RB-11. The Company indicates in both responses that the amount of each project is based upon on historical average levels of annual spending in plant additions. As shown in the interrogatory responses, the Company failed to provide sufficient details to determine the need for each project and failed to include the necessary details including a breakdown of the costs, projected starting date, and projected in service dates. I believe historical averages should not be used to speculate on future plant additions since the needs of a utility constantly change over time and should be evaluated each year.

Q. IF THE COMMISSION ACCEPTS YOUR RECOMMENDATION, SHOULD THE CORRESPONDING RETIREMENTS BE ADDED BACK?

A. Yes. As part of the $449,899 project for treatment and disposal equipment, the Company is claiming $86,472 of retirements. Therefore, the net impact to FPFTY plant for this project is $363,427 ($449,899 - $86,472). As part of the $104,741 project for structures and improvements, the Company is claiming $1,509 of retirements. Therefore, the net impact to FPFTY plant for this project is $103,232 ($104,741 - $1,509). I show the total $466,659 reduction to plant in service on I&E Ex. No. 3, Sch. 1, line 11, column G.

<u>ACCRUED DEPRECIATION</u>

Q. WHAT IS ACCRUED DEPRECIATION?

A. Accrued depreciation is the total of all prior annual depreciation expense.

Q. WHAT IS THE COMPANY'S CLAIM FOR ACCRUED DEPRECIATION IN THE FPFTY?

A. The Company's claim for accrued depreciation in the FPFTY is $10,455,892 (CUPA-WW Supporting Data, Section 1, p. 14 and I&E Ex. No. 3, Sch. 1, line 3, column F).

Q. IF THE COMMISSION ACCEPTS YOUR RECOMMENDATION TO REMOVE THE TWO PROJECTS DESCRIBED ABOVE, SHOULD THERE BE A CORRESPONDING DECREASE TO ACCRUED DEPRECIATION?

A. Yes. As stated above, accrued depreciation is the total of all prior annual depreciation expense. Since I recommend that both of these projects be removed from the plant in service, there should be a corresponding decrease to accrued depreciation equal to one year of annual depreciation expense for both projects, which amounts to $11,380 (I&E Exhibit No. 3, Sch. 1, line 3, column G). The determination of the $11,380 is explained in the Annual Depreciation expense section below.

<u>ANNUAL DEPRECIATION EXPENSE</u>

Q. WHAT IS ANNUAL DEPRECIATION EXPENSE?

A. Annual depreciation expense is the loss of value of an asset over its useful life.

Q. WHAT IS THE COMPANY'S CLAIM FOR ANNUAL DEPRECIATION EXPENSE IN THE FPFTY?

A. The Company's claim for annual depreciation expense, less CIAC and the acquisition

adjustment for the FPFTY, is $519,720 (CUPA-WW Supporting Data, Section 1, p. 11 and I&E Ex. No. 3, Sch. 2, line 7, column B).

Q. IF THE COMMISSION ACCEPTS YOUR RECOMMENDATION TO REMOVE THE TWO PROJECTS DESCRIBED ABOVE, SHOULD THERE BE A CORRESPONDING DECREASE IN IN ANNUAL DEPRECIATION EXPENSE?

A. Yes. If the two proposed projects are removed, the annual depreciation expense would be reduced by the amount of the reduction times the depreciation rate. For the $449,899 project, the reduction to annual expense is $9,086 (($449,899 - $86,472) x 0.0250). For the $104,471 project, the reduction to annual depreciation expense is $2,294 (($104,471 - $1,509) x 0.0222). This results in a total annual depreciation expense adjustment of $11,380 ($9,086 + $2,294) as shown on I&E Exhibit No. 3, Sch. 2, col. C, line 7. The Company should not be granted the opportunity to recover this $11,380 of annual depreciation expense if the plant is not in service and reflected in rate base.

<u>REPORTING REQUIREMENTS</u>

Q. WHAT AMOUNT OF PLANT IN SERVICE DID THE COMPANY INITIALLY PROPOSE FOR THE FTY AND FPFTY?

A. The Company initially proposed a total plant in service of $23,138,995 for the FTY (CUPA-WW Supporting Data, Section 1, p. 17), and $26,117,868 for the FPFTY (CUPA-WW Supporting Data, Section 1, p. 17).

Q. WHAT IS THE COMPANY'S CLAIM FOR PLANT ADDITIONS IN EACH TEST YEAR?

A. The Company's claim for plant additions in the FTY is $2,424,442 with corresponding retirements of $130,505. The Company's claim for plant additions in the FPFTY is $3,114,589 with corresponding retirements of $136,113 (CUPA-WW Supporting Data, Section 1, p. 17).

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING PLANT ADDITIONS THAT THE COMPANY PROJECTS TO BE IN SERVICE DURING THE FTY AND THE FPFTY?

A. Yes. I recommend that the Company provide the Commission's Bureaus of Technical Utility Services and Investigation and Enforcement with an update to CUPA-WW Supporting Data, Section 1, Page 17 of the filing no later than April 1, 2022, under this docket number, which should include actual capital expenditures, plant additions, and retirements by month for the twelve months ending December 31, 2021. An additional update should be provided for actual additions and retirements between January 1, 2022, and December 31, 2022, no later than April 1, 2023.

Q. WHY DO YOU RECOMMEND THAT CUPA PROVIDE THESE UPDATES?

A. I&E believes that there is value in determining how closely CUPA's projected investments in future facility comport with the actual investments that are made by the end of the FTY and FPFTY. Determining the correlation between CUPA's

1 projected and actual results will help inform the Commission and the parties in
2 CUPA's future rate cases.
3 The updates are important because, as previously explained, through the use of
4 the FPFTY, CUPA is requiring ratepayers to pay a return on its projected investment
5 in future facilities that are not in place and providing service at the time the new rates
6 take effect, but also are not subject to any guarantee of being completed and placed
7 into service. While the FPFTY provides for such projections, there should be
8 verification of the projections. Therefore, requiring the Company to provide updates
9 demonstrating that actual investments comport with projections used in setting rates
10 in the FPFTY provides the Commission with actual data to gauge the accuracy of
11 CUPA's projected investments in future proceedings as has become common practice
12 among Pennsylvania utilities as the use of the FPFTY has gained prevalence.
13
14 **INFLOW AND INFILTRATION**
15 **Q. WHAT IS INFLOW AND INFILTRATION?**
16 A. Inflow and Infiltration (I&I) is excess water that flows into sewer lines from
17 groundwater and stormwater sources.
18
19 **Q. HAS CUPA IDENTIFIED ANY I&I ISSUES IN ITS SYSTEM?**
20 A. Yes. In response to OCA Set I-No. 8, CUPA reported that Penn Estates experienced an
21 excessive amount of I&I. In this response, CUPA proposed a 10-year plan to
22 rehabilitate its collections system, indicating that the first phase of this rehabilitation will
23 take place sometime in 2021. More specifically, CUPA's testimony (CUPA-WW St.

No. 1, pp. 23-24) mentioned plans to make targeted repairs to parts of the wastewater collection system from May 2021 until October 2021. No other I&I issues were reported in the Westgate or Tamiment facilities (I&E Ex. No. 3, Sch. 8).

Q. WHAT DO YOU RECOMMEND CONCERNING I&I?

A. I recommend that the Company track repairs to deficient parts of its collection system and report the level of I&I in the next base rate case. The Company should also describe steps taken to reduce I&I and future plans to reduce excessive I&I.

Q. WHY DO YOU MAKE THIS RECOMMENDATION?

A. If I&I is reduced, the Company will reduce the overall costs in operating its wastewater system by reducing electric and chemical expense. This will also reduce the need for future capital improvements, additions, and upgrades since less flow will be collected and treated.

<u>FORFEITED DISCOUNTS</u>

Q. WHAT ARE FORFEITED DISCOUNTS?

A. A utility can assess a separate charge to customers who do not pay their bill on time. Forfeited discounts, also referred to as late payment charges, refers to the revenue received by the utility as a result of this charge.

Q. HOW MUCH REVENUE FROM FORFEITED DISCOUNTS DID THE COMPANY PROJECT IT WILL RECEIVE AT PRESENT RATES IN 2022?

A. CUPA is projecting it will receive $7,335 of forfeited discount revenue in 2022 (CUPA-WW Filing p. 1-9 and I&E Ex. No. 3, Sch. 7, line 9, column G).

Q. WHAT LEVEL OF FORFEITED DISCOUNTS IS THE COMPANY CLAIMING AT PROPOSED RATES FOR THE FPFTY ENDING DECEMBER 31, 2022?

A. CUPA is projecting the same $7,335 of forfeited discounts under proposed rates for the FPFTY ending December 31, 2022 (CUPA-WW Filing p. 1-9 and I&E Ex. No. 3, Sch. 7, line 9, column I).

Q. WHAT DO YOU RECOMMEND REGARDING THE AMOUNT OF FORFEITED DISCOUNT REVENUE THE COMPANY WILL RECEIVE UNDER PROPOSED RATES IN THE FPFTY?

A. I believe it is reasonable to expect that forfeited discounts revenues will increase when a utility's base rates are increased as a result of a base rate proceeding. Since forfeited discounts are generally a percentage of a customer's bill, increasing revenue through a rate increase will cause revenues from forfeited discounts to increase as well. Therefore, I recommend that CUPA's forfeited discount revenue in the FPFTY be increased by the same percent increase as the overall base rate increase granted by the Commission.

Q. HOW MUCH DO YOU RECOMMEND FORFEITED DISCOUNTS INCREASE UNDER FULLY PROPOSED RATES?

A. I recommend forfeited discounts be increased by $2,751 ($7,335 X 0.375) under the full rate increase requested, resulting in a total forfeited discount revenue of $10,086.

RATE STRUCTURE

Q. WHAT RATES DOES THE COMPANY CURRENTLY CHARGE FOR WASTEWATER SERVICE?

A. In the Consolidated system, the Company currently charges residential and commercial customers a flat rate of $55.39 per month, a flat school rate of $3.57 per quarter, per pupil, and an availability rate of $39.36 per quarter.

In the Tamiment system, residential customers pay a customer charge of $73.44 per quarter and commercial customers pay $163.24 per month. Tamiment customers also pay a usage charge of $13.73 per thousand gallons. Tamiment charges availability customers a flat rate of $22.90 per quarter (CUPA-WW Supporting Data, Section 2, Supporting Schedule 1, p. 3).

Q. WHAT RATES DID THE COMPANY PROPOSE FOR ITS CUSTOMERS?

A. CUPA proposed monthly flat rates of $72.44 per month for the Consolidated unmetered household, residential, and commercial customers, a flat rate of $1.63 per pupil (tariff rate of $4.90 per pupil, per quarter) for the unmetered school class, and an availability fee of $20.82 per lot per month. For Tamiment, CUPA is proposing to remove the usage charge and charge all customers the proposed $72.44 flat monthly

rate (CUPA-WW Supporting Data, Section 2, Supporting Schedule 2, incorrectly labeled as Schedule 1).

Q. DID THE COMPANY PROPOSE TO REVISE ITS RATES TO CORRECT ERRORS IN THIS ORGINAL FILING?

A. Yes. For all Residential and Commercial customers, the Company is proposing a flat monthly rate of $78.22 per month. For availability customers, the Company is proposing a flat rate of $22.91 per month. For the School rate, the Company is proposing a rate of $1.61 per month per pupil. These revised rates produce an increase of $998,705 and $3,671,042 in total revenue. The $998,705 is an increase of 37.4% ($998,705 / $2,672,338) (CUPA-WW St. No. 3, Summary p. 1-9 and I&E Exhibit No. 3, Sch. 5, p. 1, columns G-I).

Q. DO YOU ACCEPT THE COMPANY'S PROPOSAL TO CONSOLIDATE TAMIMENT RATES IN THIS PROCEEDING?

A. Yes.

Q. PLEASE EXPLAIN THIS CHANGE FOR TAMIMENT CUSTOMERS.

A. Under proposed rates, the present $73.44 per quarter residential customer charge plus usage rates in the Tamiment system will be changed to a flat monthly charge of $78.22. Also, under proposed rates, the present $163.24 per month commercial customer charge in the Tamiment system will be reduced to $78.22 per month and

these customers will no longer be charged for usage (CUPA-WW Supporting Data, Section 2, Supporting Schedule 1 and 2).

Q. WHAT IS THE AVERAGE MONTHLY BILL IMPACT OF THESE PROPOSALS FOR RESIDENTIAL CUSTOMERS IN THE CONSOLIDATED SYSTEM AND IN THE TAMIMENT SYSTEM?

A. In the Consolidated system, the monthly bill for a residential customers will increase from $55.39 per month to $78.22 per month which is an increase of $22.83 per month or 41.2% ($22.83 / $55.39).

In the Tamiment system, the quarterly bill with usage charges will switch to a monthly flat bill. Assuming a customer is billed 10,000 gallons per quarter at the present usage rate of $13.73 per thousand gallons, the total quarterly bill is $210.74 ($73.44 + $137.30). This equates to an average monthly bill of $70.25 ($210.74 / 3). Using the average monthly bill for comparison, the monthly bill for a residential customer in the Tamiment system will increase from $70.25 per month to $78.22 per month, which is an increase of $7.97 per month or 11.3% ($7.97 / $70.25).

Q. DO YOU RECOMMEND ANY CHANGES TO THE COMPANY'S PROPOSED RATES?

A. Yes. The Company is proposing to increase the availability charge for Tamiment customers from $22.90 per quarter, which is equivalent to $7.63 per month, to $22.91 per month. This equates to an increase of $15.28 ($22.91 - $7.63) per month or

200.2% ($15.28 / $7.63) (CUPA-WW Filing Section 2 and I&E Ex. 3, Sch. 5, p. 2, line 9, column K).

Q. IS THIS 200.2% INCREASE EXCESSIVE?

A. Yes. The 200.2% increase is more than 5.3 times the system average increase of 37.4%. Accordingly, this 200.2% increase violates the concept of gradualism and should be reduced.

Q. WHAT IS GRADUALISM AND WHY SHOULD THE CONCEPT OF GRADUALISM BE FOLLOWED?

A. Gradualism refers to slowly increasing a rate over time rather than all at once. The concept of gradualism should be followed so that specific customers do not receive a sudden large increase in their bill compared to other customers. This allows customers to slowly become accustomed to paying a higher rate over time.

Q. WHAT DO YOU RECOMMEND FOR THE CONSOLDATED AND TAMIMENT AVAILABILITY CHARGE?

A. I recommend that both availably rates be set to $11.00 per month.

Q. WHY DID YOU SELECT $11.00 PER MONTH?

A. This $11.00 per month equates to a decrease of $2.12 per month in the Consolidated system and an increase of $3.37 per month ($11.00 - $7.63) or 44.1% ($3.37 / $7.63) in the Tamiment system. The 44.1% increase is approximately the

same 41.5% increase proposed for the Consolidated residential flat rate customer. This recommendation will lessen the impact to Tamiment customers while producing a reasonable amount of revenue from availability charges I&E Ex. 3, Sch. 6, line 9, column K).

Q. DOES YOUR RECOMMENDATION TO ESTABLISH AN AVAILABLITY CHARGE OF $11.00 PER MONTH REDUCE PROPOSED REVENUE?

A. Yes. My recommendation reduces proposed revenues by $53,876 ($3,663,034 - $3,609,158) (I&E Exhibit 3, Sch. 5, p. 2, line 16 col. J and I&E Exhibit 3, Sch. 6, line 16 col. J).

Q. WHAT RATES DO YOU RECOMMEND TO ACHIEVE THE APPROXIMATLEY $998,700 INCREASE DESCRIBED IN CUPA STATEMENT NO. 3?

A. To achieve the approximate $998,700 increase described in the Company's testimony, I recommend two of the rates be increased slightly. First, I recommend the flat monthly rate for Consolidated and Tamiment customers be increase to $79.38 per month (I&E Exhibit No. 3, Sch. 7, p. 1, column G, lines 1,3,4,5,7,8). Second, I recommend school rate be increased to $1.705 per pupil per month (I&E Exhibit No. 3, Sch. 7, p. 2, column G, line 2).

Q. WHAT IS THE TOTAL INCREASE AFTER YOUR RATE STRUCTURE RECOMMENDATIONS ARE APPLIED AND YOUR LATE PAYMENT REVENUE IS INCLUDED?

A. The increase is $998,707 and the total proposed revenue is $3,671,044 (I&E Exhibit No. 3, Sch. 7, p. 1, line 14, columns H and J.

PUBLIC INPUT HEARING AND DEP ISSUES

Q. WHAT IS A PUBLIC INPUT HEARING AND WHY IS IT IMPORTANT?

A. The purpose of the public input hearing is to hear from the ratepayers regarding CUPA's request to increase water and wastewater rates. Ratepayers are given the opportunity to voice their concerns involving quality of service issues and the impact of potential rate increases (Tr. p. 24).

Q. WHEN WAS THE PUBLIC INPUT HEARING HELD AND WHAT WERE THE ISSUES RAISED CONCERNING WASTEWATER SERVICE?

A. On June 29, 2021, a telephonic public input hearing was held in which CUPA customers expressed their frustration over the proposed rate increases. In addition, some Tamiment customers testified about quality-of-service issues, specifically with regard to faulty grinder pumps and resulting property damage (Public Input Tr. pp. 169 -170, 179, 181, 198, 211-213).

For instance, Mr. Donahue testified that he's replaced two grinder pumps and estimated that approximately 30% of the customers have experienced grinder pump

1 issues in the community (Public Input Tr, p. 169). He further testified:

> 2 I asked the gentleman that was a representative of the water
> 3 company at this meeting do you guys gauge the pressure when
> 4 you're doing things with our sewer systems and the answer was
> 5 no. And we have it on tape that they were not using pressure
> 6 gauges and just blowing some sort of pressure through our
> 7 systems that were just destroying homeowners grinder pumps
> 8 here in this community.
> 9 (Public Input Tr., p. 170).

10 Another CUPA customer, Ms. Cline, testified that her family left for a week
11 vacation and returned to a home flooded with sewage that damaged every floor in her
12 home (Public Input Tr., p. 211). She testified that this was not an isolated grinder
13 pump issue in her home as over 48 other homes in the community have experienced
14 similar issues in the past year (Public Input Tr., pp. 211-212).
15
16 **Q. IN ADDITION TO THE PUBLIC INPUT TESTIMONY, HAVE THERE BEEN**
17 **ANY DEP VIOLATIONS?**
18 A. Yes. PA-DEP reports shown in I&E Ex. No. 3, Sch. 10, pp. 1-2 show the types of
19 chemical element violations found in the wastewater of Tamiment from August of
20 2019 to January of 2020. In addition, sewage inspection reports from December 3,
21 2020 and January 4, 2021 listed sanitary system overflow violations at the Penn
22 Estates wastewater facility (I&E Ex. No. 3, Sch. 11, pp. 1-2 and I&E Ex. No. 3, Sch.
23 12, pp.1-2).

1 **Q. BASED UPON PUBLIC INPUT HEARING TESTIMONY AND THE DEP**
2 **REPORTS, WHAT DO YOU RECOMMEND?**

3 A. I have several recommendations. With respect to grinder pump issues, I recommend
4 that CUPA investigate what pressures currently exist in the system. If the amount of
5 pressure in the system is contributing to the damage of customer grinder pumps,
6 CUPA must take action to reduce the pressure and mitigate damage to the grinder
7 pumps. I further recommend that CUPA investigate chemical discharges in the
8 wastewater system to determine if that is potentially damaging the grinder pumps.
9 Finally, I recommend that the Company provide a report to the parties within six
10 months of a Commission order reporting its findings on the issues described above.
11 With respect to the DEP issues, I recommend CUPA track and report DEP letters and
12 violations and summarize these in a report one year after the order date in this
13 proceeding and each year thereafter for the next 3 years.
14

15 **Q. WHY DO YOU MAKE THESE RECOMMENDATIONS?**

16 A. The Company is required to provide adequate, safe, and reasonable wastewater
17 service. The issues raised at the public input hearing and the recent DEP reports call
18 into question whether the Company is adhering to this requirement. Reporting its
19 findings with respect to the grinder pump issues and tracking DEP violations will
20 inform the Commission and interested parties about the status of these service issues
21 with the goal of improving service in its territory.

1 **SCALE BACK**

2 **Q. IF THE COMMISSION GRANTS LESS THAN THE FULL INCREASE**
3 **REQUESTED BY THE COMPANY, WHAT SCALE BACK DO YOU**
4 **RECOMMEND?**

5 A. If the Commission grants less than the revised full requested increase of
6 approximately $998,700, I recommend that the proposed rates on I&E Exhibit No. 3,
7 Sch. 7, p. 2, column G lines 1-2 be reduced proportionally to the increase under
8 Column K. The availability charge should also be scaled back so that the percentage
9 increase in the Tamiment system shown on line 9 is equal to the percentage increase
10 for the flat rate Consolidated customers on line 1. The remaining rates on Schedule 7
11 should be reduced to correspond with the rates on lines 1 and 2.
12

13 **Q. WHY DO YOU RECOMMEND A PROPORTIONAL SCALE BACK?**

14 **A.** The Company did not provide a cost-of-service study to analyze the revenue received
15 and expenses incurred to provide service to each class; therefore, a proportional scale
16 back of the flat monthly charge, and the school rate in the Consolidated system is the
17 most reasonable approach to establish rates if the Commission grants less than the full
18 increase. It should be noted that under this scale back the monthly rate in the
19 Tamiment system will be the same as the monthly rate in the Consolidated system
20 although the percentage change will be different because the present rates in the
21 Tamiment system are different (I&E Exhibit No. 3, Sch. 7, p. 2, column G). Absent a
22 class cost-of-service study, this is the fairest way to apply the increase, and, therefore,
23 any scale back should be applied proportionally.

Q. PLEASE PROVIDE AN EXAMPLE OF THE PROPOSED PROPORTIONAL SCALEBACK AND THE RESULTING RATES IF I&E'S RECOMMENDED INCREASE IS APPROVED BY THE COMMISSION?

A. As stated in I&E Statement No. 1, I&E is recommending an increase of $693,468. If I&E's recommended increase is approved by the Commission, the resulting rates utilizing the proposed proportional scale back would be as follows:

Combined and Tamiment System Residential flat rate: $72.77/month.
Combined and Tamiment System Commercial flat rate: $72.77/month.
Combined School rate per month per pupil: $1.56/month.
Combined and Tamiment System Availability Charge: $10.03/month.
(I&E Ex. No. 3, Sch. 9, column G)

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

PROFESSIONAL AND EDUCATIONAL EXPERIENCE
ESYAN SAKAYA

EDUCATION:

National Association of Regulatory Utility Commissioners, Clearwater, FL
Utility Rate School; Utility Rate Making Basics, October 2019

Society of Depreciation Professionals, Philadelphia, PA
Introduction to Depreciation; Depreciation Fundamentals, September 2019

Temple University, Philadelphia, PA
Bachelor of Science; Major in Engineering Technology, 2015

Community College of Philadelphia, Philadelphia, PA
Associate of Applied Science; Major in Construction Management Technology, 2011

Island School of Building Arts, Gabriola Island, BC-Canada
Certificate Graduate: Heavy Timber Construction Aug 2002-Nov 2002

Solar Energy International, Carbondale, CO
Certificate Graduate: Basic and Advanced Photovoltaic Design, April 2002-May 2002

EXPERIENCE:

12/2018-Present
Pennsylvania Public Utility Commission-Harrisburg, PA
Fixed Utility Valuation Engineer- Assist in engineering related studies related to valuation, depreciation, cost of service, quality of service as they apply to regulated utilities. Contribute in evaluating, contrasting and conducting performance analyses in distinctive sections of valuation engineering and rate structure involving valuation concepts, original cost, rate base, fixed capital costs, inventory processing, excess capacity, cost of service, and rate design. Provide expert testimony in rate related utility cases.

4/2018-12/2018
Pennsylvania Department of Transportation-Harrisburg, PA
Photogrammetry Technician I- Created three-dimensional mapping layouts of natural and man-made features from stereoscopic images on a computer workstation. Assisted in the field placement of ground based surveyed control-points prior to aerial photography acquisition. Provided field support in the use of laser scans for comprehensive digital surveying data. Operated global positioning satellite surveying equipment to obtain accurate geodetic coordinates of pre-established benchmarks.

8/2017-4/2018
Pennoni and Associates. Consulting Engineers-King of Prussia, PA
Construction Inspector-Provided quality assurance in the onsite material testing of concrete, soils, and asphalt. Read and interpreted construction drawings and specifications of materials and components. Completed daily reports regarding project progress to engineers, project managers/superintendents, contractors and clients.

TESTIMONY SUBMITTED:

I have assisted and/or submitted testimony in the following proceedings:

No.	Case
1.	UGI Gas Utilities - Gas Division, Docket Number: R-2018-3006814
2.	Newtown Artesian Water Company, Docket Number: R-2018-3006904
3.	Pittsburgh Wastewater, Docket Number: M-2018-2640803
4.	PAWC Purchase of Steelton, Docket Number: A-2019-3006814
5.	Philadelphia Gas Works, Docket Number: R-2019-3009016 - 3007636
6.	Community Utilities Water, Docket Number: R-2019-3008947
7.	Aqua Purchase of Cheltenham, Docket Number: A-2019-3008491
8.	UGI NORTH, Docket Number: R-2019-3009647
9.	UGI CENTRAL, Docket Number: R-2019-3009647
10.	UGI SOUTH, Docket Number: R-2019-3009647
11.	Twin Lakes Utilities, Docket Number: R-2019-3010958
12.	Penn Power Company, Docket: P-2019-3012628
13.	UGI Gas Utilities, Docket Number: R-2019-3015162
14.	National Fuel and Gas Distribution, Docket Number: R-2020-3015251
15.	Columbia Gas of Pennsylvania, Docket: R-2020-3018993 -3018835
16.	Duquesne Light Company, Docket Number: P-2020-301995
17.	PA American Water Company, Docket R-2020-3019369 – 310937
18.	Bethlehem Water Company, Docket R-2020-3020256
19.	Audubon Water Company, Docket: R-2020-3020919
20.	Twin Lakes Utilities, Docket: P-2020-3020914
21.	Duquesne Light Company, Docket: R-2021-3024750
22.	Community Utilities Wastewater, Docket Number: R-2021-3025207

I&E Exhibit No. 3
Witness: Esyan A. Sakaya

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC – WASTEWATER DIVISION

Docket No. R-2021-3025207

Exhibit to Accompany

The

Direct Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:
Test Year
Rate Base
Plant and Reporting Requirements
Plant Additions
Accrued Depreciation
Inflow and Infiltration
Public Input Hearing
Rate Structure
Scale Back of Rates

Community Utilities of Pennsylvania Inc.
Wastewtaer Division
R-2021-3025207

Statement of the Calculation of the Rate Base Year ended FPFTY ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 2

Line No.	Wastewater Operations Account	Support Sch. No.	Pro-forma Present 12/31/2020	Future Test Year 12/31/2021	Proposed FPFTY 12/31/2022	I&E Adjustment	Proposed FPFTY I&E
	(A)	(B)	(C)	(D)	(F)	(G)	(H)
1	Utility Plant In Service	(c)(3)	$20,845,059	$20,845,059	$20,845,059	$0	$20,845,059
2	CWIP		$955,905	$955,905	$955,905	$0	$955,905
3	Accrued Depreciation	(c)(4)	($9,209,332)	($9,790,837)	($10,455,892)	$11,380	-$10,444,512
4	Net Plant In Service		$12,591,633	$12,010,128	$11,345,073	$11,380	$11,356,453
5	Less:						
6	Contributions in aid of construction (net)		-$1,948,583	-$1,861,821	-$1,775,060	$0	-$1,775,060
7	Net Plant Acquisition Adjustment		-$1,174,754	-$1,116,181	-$1,057,608	$0	-$1,057,608
8	Customer Deposits		-$1,100	-$1,707	-$1,707	$0	-$1,707
9	Accumulated Deferred Income Taxes		-$734,226	-$750,321	-$774,535	$0	-$774,535
10	Add:						
11	Proforma Level of Plant	(c)(3)		$2,294,003	$5,272,945	($466,659)	$4,806,286
12	Deferred Charges		$105,639	$99,721	$66,921	$0	$66,921
13	Cash Working Capital	11	$221,881	$226,471	$226,058	$0	$226,058
14	**Total Rate Base**		**$9,060,490**	**$10,900,292**	**$13,302,087**	**($455,279)**	**$12,846,808**

I&E Exhibit No. 3
Schedule 1

I&E Exhibit No. 3
Schedule 2

Community Utilities of Pennsylvania, Inc.
Wastewater Division
R-2021-3025207
Depreciation Expense - Summary

Line No.	Description	Proposed FPFTY 12/31/2022	I&E Adjustment	I&E Future Test Year 12/31/2022
	(A)	(B)	(C)	(D)
	Water Operations			
1	Utility Plant In Service	$580,011	-$11,380	$568,631
2	Transportation	$21,385	$0	$21,385
3	Computers	$63,659	$0	$63,659
4	**Total Deperciation Expense**	$665,055	-$11,380	$653,675
	Less:			
5	Contributions in Aid of Construction (Net)	$86,762	$0	$86,762
6	Plant Acquistion Adjustment	$58,573	$0	$58,573
7	**Total Depreciation and Amortization Expense**	**$519,720**	**-$11,380**	**$508,340**

Community Utilities of Pennsylvania, Inc.
Wastewater Divisions
R-2021-3025207
Reserve for Depreciation of Utility Plant
the Future Test Year Ended December 31, 2021, and FPFTY Ended December 31, 2022

Line No.		Base Year Ending 12/31/2020 Total	Company Increase	Base Year Ending 12/31/2021 Total	Company Increase	Future Test Year Ending 12/31/2022 Total
	(A)	(B)	(C)	(D)	(E)	(F)
1	Per Books Reserve for Depreciation	$9,209,332				
2	**Accumulated Depreciation Adjustments:**					
3	Pro-forma Plant A/D		$511,831		$580,011	
4	Computers		$45,932		$63,659	
5	Vehicles		$23,742		$21,385	
6	**Pro-forma Reserve for Depreciation**	**$9,209,332**	**$581,505**	**$9,790,837**	**$665,055**	**$10,455,892**
7	**I&E Adjustment**					**($11,380)**

		Base Year Ending 12/31/2020 Total	Increase	Base Year Ending 12/31/2021 Total	I&E Adjustment	Future Test Year Ending 12/31/2022 Total
8	Per Books Reserve for Depreciation	$9,209,332				
9	**Accumulated Depreciation Adjustments:**					
10	Pro-forma Plant A/D					
11	Computers		$511,831		$568,631	
12	Vehicles		$45,932		$63,659	
			$23,742		$21,385	
13	**Pro-forma Reserve for Depreciation**					
		$9,209,332	**$581,505**	**$9,790,837**	**$653,675**	**$10,444,512**

I&E Exhibit No. 3
Schedule 3

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions' Responses to Bureau of Investigation and Enforcement Data Requests Set RB Nos. 1-13

I&E-RB-7-D Provide a description of the proposed additions to the treatment and disposal equipment at the treatment plant amounting to $449,899 in FPFTY additions (Company filing p.1-17, column H). Include the following:

A. A breakdown of the $449,899.

B. The proposed starting date.

C. The amount spent to date on each improvement.

D. The proposed in-service date.

A. The Company included $449,899 in plant additions based on a historical average level of annual spending. There are no additional capital projects forecasted for this period.
B. There is not a designated start date for general capital spending.
C. There has been no spending to date for 2022 forecasted treatment and disposal equipment additions.
D. There is not a designated in-service date for the general capital expenditures.

PROVIDED BY: **David Clark**

DATE: **May 14, 2021**

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions' Responses to Bureau of Investigation and Enforcement Data Requests Set RB Nos. 1-13

I&E-RB-11-D Provide a description of the proposed additions to the treatment and disposal equipment at plant amounting to $104,741 in FPFTY additions (Company filing p.1-17, column H). Include the following:

A. A breakdown of the $104,741.

B. The proposed starting date.

C. The amount spent to date on each improvement.

D. The proposed in-service date.

A. The Company included $104,741 in plant additions based on a historical average level of annual spending. There are no additional capital projects forecasted for this period.
B. There is not a designated start date for general capital spending.
C. There has been no spending to date for 2022 forecasted treatment and disposal equipment additions.
D. There is not a designated in-service date for the general capital expenditures.

PROVIDED BY: **David Clark**

DATE: **May 14, 2021**

Community Utilities of Pennsylvania, Inc
Wastewater Division
R-2021-3025207
Statement of Operating Revenue Under the Existing and Proposed Rates

Answer to 52 Pa. Code 53.52 (b)(4)

Line No.	Wastewater Operations	Schedule Number	Present Per Books HTY 12/31/2020	Adjustments	Present FTY 12/31/2021	Company Corrections	Present FPFTY 12/31/2022	Increase	Proposed FPFTY 12/31/2022	Percent Increase
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Volumetric Revenue									
1	Residential	(b)(2)	$304,822	$0	$304,822	$0	$304,822	-$304,822	$0	-100.0%
2	Commercial	(b)(2)	$3,027	$0	$3,027	$0	$3,027	-$3,027	$0	-100.0%
3	**Total Flat Rate Revenue**		**$307,849**	**$0**	**$307,849**	**$0**	**$307,849**	**-$307,849**	**$0**	-100.0%
	Flat Rate Revenue									
4	Residential	(b)(2)	$2,288,593	$3,460	$2,292,053	$0	$2,292,054	$1,236,162	$3,528,216	53.9%
5	School	(b)(2)	$16,922	-$471	$16,451	$0	$16,451	$5,788	$22,238	35.2%
6	Availability	(b)(2)	$37,170	$590	$37,759	$0	$37,759	$65,876	$103,636	174.5%
7	Commercial	(b)(2)	$13,856	-$3,639	$10,216	$0	$10,216	-$1,272	$8,944	-12.5%
8	**Total Flat Rate Revenue**		**$2,356,541**	**-$61**	**$2,356,480**	**$0**	**$2,356,480**	**$1,306,554**	**$3,663,034**	55.4%
9	Forfeited Discounts	(b)(2)	-$1,789	$9,124	$7,335	$0	$7,335	$0	$7,335	0.0%
10	Miscellaneous Service Revenues	(b)(2)	$1,180	-$507	$673	$0	$673	$0	$673	0.0%
11	Purchased Services	(b)(2)	$0	$0	$0	$0	$0	$0	$0	
12	Accruals	(b)(2)	-$71,652	$71,652	$0	$0	$0	$0	$0	
13	**Total Other Revenue**		**-$72,261**	**$80,269**	**$8,008**	**$0**	**$8,008**	**$0**	**$8,008**	0.0%
14	Total Revenue		**$2,592,129**	**$80,208**	**$2,672,337**	**$0**	**$2,672,337**	**$998,705**	**$3,671,042**	37.4%

I&E Exhibit No. 3
Schedule 5
Page 1 of 2

Community Utilities of Pennsylvania, Inc.
Wastewater Division
R-2021-3025207
FPFTY Company PROPOSED Rates and Revenues
December 31, 2022

Line No.	Sewer Service	Description	Gallonage	Usage Charge	Vol Revenue	Units	Proposed Flat Rate	Base .	PROPOSED Revenues	Rate Increase	Percent Increase
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	Monthly	Unmetered Household	0.000	$0.000	$0	38,587.6	$78.220	$3,018,323	$3,018,323	$885,854	**41.2%**
2	Monthly	Unmetered School	0.000	$0.000	$0	13,824.0	$1.609	$22,238	$22,238	$5,788	**35.2%**
3	Monthly	Unmetered Commercial 5/8th	0.000	$0.000	$0	66.4	$78.220	$5,190	$5,190	$1,515	**41.2%**
4	Monthly	Unmetered Commercial 1 inch	0.000	$0.000	$0	12.0	$78.220	$939	$939	$274	**41.2%**
5	Monthly	Unmetered Monthly - Availability	0.000	$0.000	$0	587.6	$22.910	$13,462	$13,462	$5,747	**74.6%**
6	Monthly	Tamiment Res Flat Monthly	0.000	$0.000	$0	6,518.7	$78.220	$509,893	$509,893	$45,487	**6.5%**
7	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	12.0	$78.220	$939	$939	-$4,048	**-52.1%**
8	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	24.0	$78.220	$1,877	$1,877	-$2,040	**-52.1%**
9	Monthly	Tamiment Monthly Availability	0.000	$0.000	$0	3,936.0	$22.910	$90,174	$90,174	$60,129	**200.1%**
10		**Sewer Total**	**0.000**	**$0.000**	**$0**	**63,568**		**$3,663,034**	**$3,663,034**	$998,705	37.5%

Line No.		
11	Availability	$103,636
12	Residential	$3,528,216
13	School	$22,238
14	Commercial	$8,944
15		
16	Total	$3,663,034

I&E Exhibit No. 3
Schedule 5
Page 2 of 2

Community Utilities of Pennsylvania, Inc.
Wastewater Division
R-2021-3025207
FPFTY Company PROPOSED Rates and Revenues
December 31, 2022

Line No.	Sewer Service	Description	Gallonage	Usage Charge	Vol Revenue	Units	Proposed Flat Rate	Base .	PROPOSED Revenues	Rate Increase	Percent Increase
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	Monthly	Unmetered Household	0.000	$0.000	$0	38,587.6	$78.220	$3,018,323	$3,018,323	$885,854	**41.2%**
2	Monthly	Unmetered School	0.000	$0.000	$0	13,824.0	$1.609	$22,238	$22,238	$5,788	**35.2%**
3	Monthly	Unmetered Commercial 5/8th	0.000	$0.000	$0	66.4	$78.220	$5,190	$5,190	$1,515	**41.2%**
4	Monthly	Unmetered Commercial 1 inch	0.000	$0.000	$0	12.0	$78.220	$939	$939	$274	**41.2%**
5	Monthly	Unmetered Monthly - Availability	0.000	$0.000	$0	587.6	$11.000	$6,464	$6,464	-$1,251	**-16.2%**
6	Monthly	Tamiment Res Flat Monthly	0.000	$0.000	$0	6,518.7	$78.220	$509,893	$509,893	$45,487	**6.5%**
7	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	12.0	$78.220	$939	$939	-$4,048	**-52.1%**
8	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	24.0	$78.220	$1,877	$1,877	-$2,040	**-52.1%**
9	Monthly	Tamiment Monthly Availability	0.000	$0.000	$0	3,936.0	$11.000	$43,296	$43,296	$13,251	**44.1%**
10		**Sewer Total**	**0.000**	**$0.000**	**$0**	**63,568**		**$3,609,158**	**$3,609,158**	$944,829	35.5%
11									Availability	$49,760	
12									Residential	$3,528,216	
13									School	$22,238	
14									Commercial	$8,944	
15											
16									Total	$3,609,158	

I&E Exhibit No. 3
Schedule 6

Community Utilities of Pennsylvania, Inc
Wastewater Division
R-2021-3025207
Statement of Operating Revenue Under the Existing and Proposed Rates

Line No.	Wastewater Operations	Schedule Number	Present Per Books HTY 12/31/2020	Adjustments	Present FTY 12/31/2021	Company Corrections	Present FPFTY 12/31/2022	Increase	Proposed FPFTY 12/31/2022	Percent Increase
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Volumetric Revenue									
1	Residential	(b)(2)	$304,822	$0	$304,822	$0	$304,822	-$304,822	$0	-100.0%
2	Commercial	(b)(2)	$3,027	$0	$3,027	$0	$3,027	-$3,027	$0	-100.0%
3	**Total Flat Rate Revenue**		**$307,849**	**$0**	**$307,849**	**$0**	**$307,849**	**-$307,849**	**$0**	-100.0%
	Flat Rate Revenue									
4	Residential	(b)(2)	$2,288,593	$3,460	$2,292,053	$0	$2,292,054	$1,288,575	$3,580,629	56.2%
5	School	(b)(2)	$16,922	-$471	$16,451	$0	$16,451	$7,119	$23,570	43.3%
6	Availability	(b)(2)	$37,170	$590	$37,759	$0	$37,759	$12,000	$49,760	31.8%
7	Commercial	(b)(2)	$13,856	-$3,639	$10,216	$0	$10,216	-$1,139	$9,077	-11.1%
8	**Total Flat Rate Revenue**		**$2,356,541**	**-$61**	**$2,356,480**	**$0**	**$2,356,480**	**$1,306,556**	**$3,663,036**	55.4%
9	Forfeited Discounts	(b)(2)	-$1,789	$9,124	$7,335	$0	$7,335	$0	$7,335	0.0%
10	Miscellaneous Service Revenues	(b)(2)	$1,180	-$507	$673	$0	$673	$0	$673	0.0%
11	Purchased Services	(b)(2)	$0	$0	$0	$0	$0	$0	$0	
12	Accruals	(b)(2)	-$71,652	$71,652	$0	$0	$0	$0	$0	
13	**Total Other Revenue**		**-$72,261**	**$80,269**	**$8,008**	**$0**	**$8,008**	**$0**	**$8,008**	0.0%
14	Total Revenue		**$2,592,129**	**$80,208**	**$2,672,337**	**$0**	**$2,672,337**	**$998,707**	**$3,671,044**	37.4%

I&E Exhibit No. 3
Schedule 7
Page 1 of 2

Community Utilities of Pennsylvania, Inc.
Wastewater Division
R-2021-3025207
FPFTY Company PROPOSED Rates and Revenues
December 31, 2022

Line No.	Sewer Service	Description	Gallonage	Usage Charge	Vol Revenue	Units	Proposed Flat Rate	Base .	PROPOSED Revenues	Rate Increase	Percent Increase
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	Monthly	Unmetered Household	0.000	$0.000	$0	38,587.6	$79.382	$3,063,162	$3,063,162	$930,692	**43.3%**
2	Monthly	Unmetered School	0.000	$0.000	$0	13,824.0	$1.705	$23,570	$23,570	$7,119	**43.3%**
3	Monthly	Unmetered Commercial 5/8th	0.000	$0.000	$0	66.4	$79.382	$5,267	$5,267	$1,592	**43.3%**
4	Monthly	Unmetered Commercial 1 inch	0.000	$0.000	$0	12.0	$79.382	$953	$953	$288	**43.3%**
5	Monthly	Unmetered Monthly - Availability	0.000	$0.000	$0	587.6	$11.000	$6,464	$6,464	-$1,251	**-16.2%**
6	Monthly	Tamiment Res Flat Monthly	0.000	$0.000	$0	6,518.7	$79.382	$517,467	$517,467	$53,062	**8.1%**
7	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	12.0	$79.382	$953	$953	-$4,034	**-51.4%**
8	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	24.0	$79.382	$1,905	$1,905	-$2,013	**-51.4%**
9	Monthly	Tamiment Monthly Availability	0.000	$0.000	$0	3,936.0	$11.000	$43,296	$43,296	$13,251	**44.1%**
10		**Sewer Total**	**0.000**	**$0.000**	**$0**	**63,568**		**$3,663,036**	**$3,663,036**	$998,707	37.5%

Availability	$49,760
Residential	$3,580,629
School	$23,570
Commercial	$9,077
Total	$3,663,036

I&E Exhibit No. 3
Schedule 7
Page 2 of 2

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc.
Wastewater Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions'
Responses to Office of Consumer Advocate Interrogatories, Set I Nos. 1-8

8. Are any of the Company's systems subject to excessive infiltration/inflow? If yes, identify the system(s) and discuss any plans to reduce the infiltration/inflow.

RESPONSE: Penn Estates experiences excessive i&i. GHD Inc. performed a flow study on the collections system. This study showed areas of increased flow due to i&i. The collections system, including manholes, were cleaned and televised in 2020. The issues will be addressed with a 10 year plan to rehab the collections system, prioritizing the worst areas. The first phase of collections rehab will take place 2021. GHD also completed a hydraulic study of the WWTP in 2020. CUPA acquired a WQM Permit to make recommended modifications to the plant.

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

Community Utilities of Pennsylvania, Inc.
Wastewater Division
R-2021-3025207
FPFTY Company I&E SCALE BACK AT $693,468
December 31, 2022

Line No.	Sewer Service	Description	Gallonage	Usage Charge	Vol Revenue	Units	Proposed Flat Rate	Base .	PROPOSED Revenues	Rate Increase	Percent Increase
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	Monthly	Unmetered Household	0.000	$0.000	$0	38,587.6	$72.772	$2,808,114	$2,808,114	$675,645	**31.4%**
2	Monthly	Unmetered School	0.000	$0.000	$0	13,824.0	$1.563	$21,613	$21,613	$5,162	**31.4%**
3	Monthly	Unmetered Commercial 5/8th	0.000	$0.000	$0	66.4	$72.772	$4,828	$4,828	$1,153	**31.4%**
4	Monthly	Unmetered Commercial 1 inch	0.000	$0.000	$0	12.0	$72.772	$873	$873	$209	**31.4%**
5	Monthly	Unmetered Monthly - Availability	0.000	$0.000	$0	587.6	$10.029	$5,893	$5,893	-$1,822	**-23.6%**
6	Monthly	Tamiment Res Flat Monthly	0.000	$0.000	$0	6,518.7	$72.772	$474,382	$474,382	$9,976	**-0.9%**
7	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	12.0	$72.772	$873	$873	-$4,113	**-55.4%**
8	Monthly	Tamiment Comm 5/8th Monthly	0.000	$0.000	$0	24.0	$72.772	$1,747	$1,747	-$2,171	**-55.4%**
9	Monthly	Tamiment Monthly Availability	0.000	$0.000	$0	3,936.0	$10.029	$39,473	$39,473	$9,429	**31.4%**
10		**Sewer Total**	**0.000**	**$0.000**	**$0**	**63,568**		**$3,357,797**	**$3,357,797**	$693,468	26.0%

Availability	$45,366
Residential	$3,282,496
School	$21,613
Commercial	$8,322
Total	$3,357,797

I&E Exhibit No. 3
Schedule 9

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

May 20, 2020

NOTICE OF VIOLATION

Delivered via email

Community Utilities of Pennsylvania, Inc.
c/o Ms. Emily Long, State Operations Manager
570 Hallet Road
East Stroudsburg, PA 18301

Re: Sewage
Tamiment Resort WWTP
NPDES Permit No. PA0037290/WQM Permit No. 5200401
Lehman Township, Pike County

Dear Ms. Long:

A review of Community Utilities of Pennsylvania, Inc. - Tamiment Resort WWTP's Discharge Monitoring Reports (DMRs) has indicated effluent violations with respect to the limitations set forth in NPDES Permit No. PA0037290. Specifically, the violations are as follows:

Monitoring Period	Parameter	Permit Limit	Reported Value
August 2019	Nitrate/Nitrite-N	10.0 mg/L Monthly Average	16.8 mg/L
		20.0 mg/L IMAX	24.0 mg/L
	Total Phosphorus	1.0 mg/L Monthly Average	1.2 mg/L
		2.0 mg/L IMAX	2.77 mg/L
September 2019	Nitrate/Nitrite-N	10.0 mg/L Monthly Average	17.4 mg/L
		20.0 mg/L IMAX	23.6 mg/L
	Total Phosphorus	1.0 mg/L Monthly Average	2.55 mg/L
		2.0 mg/L IMAX	3.89 mg/L
October 2019	Nitrate/Nitrite-N	10.0 mg/L Monthly Average	15.2 mg/L
		20.0 mg/L IMAX	22.1 mg/L
	Total Phosphorus	1.0 mg/L Monthly Average	3.77 mg/L
		2.0 mg/L IMAX	4.19 mg/L
November 2019	Nitrate/Nitrite-N	10.0 mg/L Monthly Average	12.5 mg/L
December 2019	Nitrate/Nitrite-N	10.0 mg/L Monthly Average	17.1 mg/L
		20.0 mg/L IMAX	21.7 mg/L
	Total Phosphorus	1.0 mg/L Monthly Average	2.18 mg/L
January 2020	Nitrate/Nitrite-N	10.0 mg/L Monthly Average	10.8 mg/L
		20.0 mg/L IMAX	20.7 mg/L

Further review has indicated that the following samples were not collected at the proper sampling frequencies as required by NPDES Permit No. PA0037290, Part A.I.A.:

Monitoring Period	Parameter	Required Frequency	Reported Frequency
August 2019	pH	1/day	15/18 days
	Total Residual Chlorine	1/day	17/18 days
	Total Kjeldahl Nitrogen	1/month	0/month

Please be advised that failure to comply with the terms and conditions of your permit is a violation of your NPDES Permit and the Clean Streams Law of Pennsylvania, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. Section 691.1 et seq. ("The Clean Streams Law") and subjects Community Utilities of Pennsylvania, Inc. to appropriate enforcement action including, but not limited to, civil penalty assessment.

The Department requests that you respond in writing to this Notice within 15 days of its receipt. Said response should indicate the cause of the above-described non-compliance and the steps that will be or have been taken in order to ensure future compliance.

This Notice of Violation is neither an order nor any other final action of the Department. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

If you have any questions concerning this correspondence, you may contact me at 570.895.4050.

Sincerely,

Daniel Paul Ackers
Water Quality Specialist
Clean Water Program

cc: Lehman Township

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

SEWAGE INSPECTION REPORT

Permit Number	Inspection Date	Entry Time	Exit Time	Inspection Type	Inspection ID
PA0060283	12/03/2020	09:52	09:58	ADMIN	3122685

Municipality	Stroud	**County**	Monroe
Facility Name	PENN ESTATES WWTP	**Permittee Name**	PENN ESTATES UTILITIES INC
24-Hour Emergency Contact Person/Phone	Emily Long / (570) 213-1447	**Email**	Emily.long@uiwater.com
Physical Location Address	503 HALLET RD, EAST STROUDSBURG, PA, 18301		
Permit Expiration Date	08/31/2017	**Next Submittal ---- Due Date**	----

Violations*

Violation(s) Noted

1. **25 Pa. Code 92a.47(c):** NPDES - Illegal discharge to waters of the Commonwealth from a sanitary sewer overflow (SSO) Heavy rain fall caused an SSO at EQ basin 4 at the treatment plant.

Person Interviewed Vincent Varuolo	**Date** 12/03/2020	**Inspector** DANIEL P ACKERS	**Date** 12/03/2020
Signature phone call	**Phone Number** (570) 570-9884	**Signature**	**Phone Number** (570) 895-4050
Title Operator		**Title** WTR QLTY SPCST	
Email Vincent.varuolo@uiwater.com		**Email** dackers@pa.gov	

This document is official notification that a representative of the Department of Environmental Protection inspected the above facility. The findings of this inspection are shown above and on any attached pages. *Any violations which were noted during the inspection are indicated. Violations may also be discovered upon examination of the results of laboratory analyses of the discharge and/or review of Department records.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

SEWAGE INSPECTION REPORT

Facility Details Section			
Responsible Official	EMILY LONG	**Title**	AREA MGR
Business Phone	(570) 213-1447	**Email**	Emily.Long@corixgroup.com
Permittee Address	570 HALLET RD, EAST STROUDSBURG, PA, 18301		
Certified Operator	REESE WILLIAM R JR	**Client ID**	335705
Certificates	A,E-1,5,4	**Certification Status**	Active
Expiration Date	06/30/2023		
Is a Copy of the permit(s) on-site?	----		
Has the interviewed operator/person reviewed the facility's permit(s)?	----		
Comments			
SSO at the treatment plant due to heavy rains on 11/30/2020.			
Participants: ----			

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

SEWAGE INSPECTION REPORT

Permit Number	Inspection Date	Entry Time	Exit Time	Inspection Type	Inspection ID
PA0060283	01/04/2021	13:28	13:33	ADMIN	3128292

Municipality	Stroud	**County**	Monroe
Facility Name	PENN ESTATES WWTP	**Permittee Name**	PENN ESTATES UTILITIES INC
24-Hour Emergency Contact Person/Phone	Emily Long / (570) 213-1447	**Email**	Emily.long@uiwater.com
Physical Location Address	503 HALLET RD, EAST STROUDSBURG, PA, 18301		
Permit Expiration Date	08/31/2017	**Next Submittal ---- Due Date**	----

Violations*

Violation(s) Noted

1. **25 Pa. Code 92a.47(c):** NPDES - Illegal discharge to waters of the Commonwealth from a sanitary sewer overflow (SSO) Heavy rainfall caused an SSO at the EQ tanks at the treatment plant.

Person Interviewed Vincent Varuolo	**Date** 01/04/2021	**Inspector** DANIEL P ACKERS	**Date** 01/04/2021
Signature phone call	**Phone Number** (570) 517-9884	**Signature**	**Phone Number** (570) 895-4050
Title Operator		**Title** WTR QLTY SPCST	
Email Vincent.varuolo@uiwater.com		**Email** dackers@pa.gov	

This document is official notification that a representative of the Department of Environmental Protection inspected the above facility. The findings of this inspection are shown above and on any attached pages. *Any violations which were noted during the inspection are indicated. Violations may also be discovered upon examination of the results of laboratory analyses of the discharge and/or review of Department records.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

SEWAGE INSPECTION REPORT

Facility Details Section					
Responsible Official	EMILY LONG		**Title**	AREA MGR	
Business Phone	(570) 213-1447		**Email**	emily.long@uiwater.com	
Permittee Address	570 HALLET RD, EAST STROUDSBURG, PA, 18301-7274				
Certified Operator	REESE WILLIAM R JR		**Client ID**	335705	
Certificates	A,E-1,5,4	**Certification Status**	Active	**Expiration Date**	06/30/2023
Is a Copy of the permit(s) on-site?				N/O	
Has the interviewed operator/person reviewed the facility's permit(s)?					N/O
Comments					
SSO at the EQ tanks at the treatment plant due to heavy rains that started on 12/24/20.					
Participants: ----					

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2021-3025207
Community Utilities of Pennsylvania Inc.	:	
Wastewater Division	:	

VERIFICATION OF THE
BUREAU OF INVESTIGATION AND ENFORCEMENT

I, Esyan A. Sakaya, on behalf of the Bureau of Investigation and Enforcement, hereby verify that the documents preliminarily identified as I&E Statement No. 3, I&E Exhibit No. 3, and I&E Statement No. 3-SR were prepared by me or under my direct supervision and control. Furthermore, the facts contained therein are true and correct to the best of my knowledge, information and belief and I expect to be able to prove the same at an Evidentiary Hearing in this matter. This Verification is made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

_/s/ Esyan A. Sakaya_____
Esyan A. Sakaya
Fixed Utility Valuation Engineer
Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement

Dated: September 7, 2021

OCA STATEMENT 1

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
v.	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
and	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

DIRECT TESTIMONY

OF

STACY L. SHERWOOD

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

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APPENDIX A: Resume of Stacy L. Sherwood
APPENDIX B: Schedules SLS-1 through SLS-14

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Stacy L. Sherwood. I am an Economist with Exeter Associates, Inc. ("Exeter"). Our offices are located at 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter is a firm of consulting economists specializing in issues pertaining to public utilities.

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS, WORK EXPERIENCE, AND EDUCATIONAL BACKGROUND.

A. I have over 12 years of experience in the energy sector, related specifically to the review and development of energy efficiency and demand response programs and policies for the use of advanced technologies for pollution prevention and energy efficiency. With Exeter, I have provided technical support and analysis to state and federal clients on energy efficiency, distributed resources, demand response, and renewable energy. I have also participated in water rate cases in Rhode Island, Pennsylvania, and New Jersey and wastewater cases in Pennsylvania. I hold a Bachelor's Degree in Accounting, Business, and Economics from McDaniel College. My resume is provided in Appendix A.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY PROCEEDINGS ON UTILITY ISSUES?

A. Yes. I have testified on a range of issues including revenue requirement and adequacy of service for electric, natural gas, water, and wastewater utility services, energy efficiency programs, and automated metering infrastructure. I have testified before the Maryland Public Service Commission, Pennsylvania Public Utility Commission, and

Rhode Island Public Utility Commission. My resume, provided in Appendix A, has further details on my experience in testifying.

Q. ON WHOSE BEHALF ARE YOU APPEARING**?**

A. I am presenting testimony on behalf of the Pennsylvania Office of Consumer Advocate ("OCA").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. Exeter was retained by the OCA to assist in the evaluation of the water and wastewater rate filings submitted by Community Utilities of Pennsylvania Inc. ("CUPA" or "Company") to the Pennsylvania Public Utility Commission ("PA PUC" or "Commission") on April 14, 2021. This testimony presents my findings and recommendations with regard to the overall revenue increase that CUPA has supported. In addition, I discuss other factors the Commission should consider when evaluating whether and how much of a rate increase is reasonable at this time.

OCA witness Noah D. Eastman will address the Company's rate of return in OCA Statement 2. OCA witness Jerome D. Mierzwa will address CUPA's Cost of Service studies and rate design proposals in OCA Statement 3. OCA witness Terry L. Fought will address issues related to the quality of service provided by the Company in OCA Statement 4.

Q. HAVE YOU PREPARED SCHEDULES TO ACCOMPANY YOUR TESTIMONY?

A. Yes. I have prepared Schedules SLS-1 through SLS-14. Schedule SLS-1 provides a summary of my recommended total water revenue requirement, SLS-2 provides a summary of my recommended water adjustments, and SLS-3 provides the water rate base. Schedule SLS-4 provides a summary of my recommended total wastewater revenue requirement, SLS-5 provides a summary of my recommended wastewater

adjustments, and SLS-6 provides the wastewater rate base. Schedules SLS-7 through SLS-14 detail my individual recommended adjustments for both water and wastewater. The schedules are provided in Appendix B.

Q. WHAT TIME PERIODS HAVE YOU UTILIZED IN MAKING YOUR DETERMINATION OF CUPA'S REVENUE REQUIREMENTS?

A. Consistent with the CUPA filings, I have utilized a historical test year ("HTY") that corresponds to the year ended December 31, 2020; a future test year ("FTY") that corresponds to the year ending December 31, 2021; and a fully projected future test year ("FPFTY") that corresponds to the year ending December 31, 2022 as the basis for determining CUPA's revenue requirements and the revenue increase necessary to recover those requirements.

Q. WHAT IS YOUR RECOMMENDATION WITH REGARD TO REVENUE REQUIREMENT IN THIS PROCEEDING?

A. I have calculated the revenue increases for water and wastewater separately. Considering my adjustments to the Company's water claims, as discussed below, and applying an overall cost of capital of 7.10 percent (calculated by OCA rate of return witness Noah Eastman in OCA Statement 2), I have calculated the overall water revenue requirement increase to be $547,120 in this proceeding. That recommendation is $215,139 less than the increase of $762,259 that CUPA has requested for water in this case.

Considering my adjustments to the Company's wastewater claims, as discussed below, and applying an overall cost of capital of 7.10 percent (calculated by OCA witness Eastman in OCA Statement 2), I have calculated the overall wastewater revenue requirement increase to be $645,820 in this proceeding. That recommendation

is $353,655 less than the increase of $999,475 that CUPA has requested for wastewater in this case.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. In the remainder of my testimony, I discuss the reasonableness of a rate increase at this time and I document and explain each of the nine revenue requirement adjustments I am recommending that the Commission approve. My discussion of these adjustments is organized into sections corresponding to the issue being addressed.

II. REASONABLENESS OF INCREASING RATES AT THIS TIME

Q. DO YOU BELIEVE THE TIMING OF THIS RATE INCREASE MAY NEGATIVELY IMPACT CUSTOMERS, MORE SO THAN IN OTHER TIMES?

A. Yes. In March 2020, the Coronavirus ("COVID-19") began negatively impacting the U.S. economy resulting in significant levels of unemployment and a constrained housing market, which exacerbated affordability issues. As a result of the COVID-19 pandemic, the federal government offered numerous stimulus packages in 2020 and early 2021 to individuals and businesses.[1] Additionally, the federal and some state governments instituted moratoriums on evictions, foreclosures, and utility shutoffs.[2,3] While the magnitude of the financial and economic impacts has lessened since March 2020, the issue of utility affordability continues to impact Americans, including those not previously qualified as low-income, and the negative impacts on the economy continue. Pennsylvanians have not been spared from the impacts of this pandemic, with

[1] https://home.treasury.gov/policy-issues/coronavirus.
[2] https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/24/fact-sheet-biden-harris-administration-announces-initiatives-to-promote-housing-stability-by-supporting-vulnerable-tenants-and-preventing-foreclosures/.
[3] Pennsylvania PUC Docket No. M-2020-3019244, Emergency Order (March 13, 2020).

unemployment rates ranging from 16.2 percent in April 2020 to 6.9 percent in June 2021.[4] It is unclear how long the impacts of COVID-19 will be felt on the economy at this time and how long it may take for individuals to recover.

Q. ARE OTHERS CONCERNED ABOUT CUPA'S PROPOSED INCREASES?

A. Yes. At the June 29, 2021 Public Input Hearing in this proceeding, many CUPA customers and three state representatives raised concerns regarding affordability of rate increases at this time. In particular, Pennsylvania Representatives Christina Sappey, Rosemary Brown, and Maureen Madden, expressed concerns for their respective constituents who have indicated that the rate increase would negatively impact the economically insecure, especially those such as seniors on fixed income or people and families impacted by COVID-19. (Tr. 36-38, 42-45). Furthermore, Representative Madden indicated that her constituents don't "feel like they're getting any upgraded quality of their water for the constant increase in their water and wastewater services" (Tr. 46).

Q. DID ANY RATEPAYERS ECHO THE CONCERNS OF THE REPRESENTATIVES?

A. Yes. Numerous ratepayers indicated that they would have difficulty paying the proposed increase (Tr. 85, 116-117, 121, 136, 148, 225, and 236), fixed income customers, as well as other customers, indicated that the increases sought by CUPA exceed cost of living adjustments (Tr. 48, 71, 85, 105, 145, 147-148, 163, and 195), and that rates continue to increase every two years, regardless of conservation efforts and without any improvement in service (Tr. 96, 102-103, 134, 141-143, 173, 175, 188). Ratepayers also indicated that the requested increases during a time when the

[4] https://www.bls.gov/regions/mid-atlantic/pennsylvania.htm#eag

economic impacts of COVID-19 are still being felt will negatively impact households (Tr. 50, 105, 108, 130, 202, 236, and 240).

Q. WERE CONCERNS OTHER THAN AFFORDABILITY RAISED DURING THE PUBLIC HEARING?

A. Yes. Ratepayers indicated that CUPA is poor at communicating to customers. Per one ratepayer, the water system was contaminated on June 28, 2019 and they were not notified of the contamination until July 17th (Tr. 103-104). Other customers testified about delayed or confusing notices. (Tr. 45-46, 135-137, 141). One ratepayer said "First you tell me to boil water. Then you tell me don't drink the water so I have to buy cases of bottled water." (Tr. 137). Another ratepayer indicated that their water bill was around $900 and no one of the Company flagged the bill as high use (Tr. 201). Customers also indicated that it is difficult to reach someone at CUPA to ask about issues. (Tr. 74-7, 137, 191).

Q. HOW SHOULD THE COMPANY ADDRESS THESE CONCERNS ABOUT SERVICE?

A. CUPA should make changes to ensure that customers can easily reach the Company and get answers to their questions by phone. Additional concerns raised during the Public Input Hearing are addressed by OCA witness Fought in OCA Statement 4.

Q. WHAT SHOULD THE COMMISSION CONSIDER WHEN EVALUATING THE REASONABLENESS OF THE RATES PRODUCED IN SETTING THE REVENUE REQUIREMENTS IN THIS PROCEEDING?

A. In determining an appropriate revenue requirement, consideration should be given to whether the revenues produce rates that are just and reasonable, not only from the Company's perspective, but also from the ratepayers' perspective. In this case, there are three issues to consider in determining just and reasonable rates: affordability,

gradualism/rate shock, and adequacy of service. Each of these components is important in determining reasonable rates in this case.

As discussed above, many customers testified in this proceeding that proposed rates – and even current rates – are not affordable. The Commission should consider the impacts of the COVID-19 pandemic when reaching its decision as to whether any increase should be authorized for CUPA in this proceeding. Any rate increase at this time may worsen hardships, including intensifying arrearages.[5]

CUPA has proposed to increase average water and wastewater bills for some of its customers by 76 percent and 100 percent, respectively. As subsequently explained by OCA witness Mierzwa in OCA Statement 3, increasing rates as the Company has proposed will result in rate shock that violates the important ratemaking principle of gradualism. However, even if the rate shock issue were mitigated through a phased-in increase, for example, it may not be affordable for some customers.

Many customers raised concerns about CUPA's service. For purposes of determining just and reasonable rates, the adequacy of service should be considered in setting the fair rate of return. In no case should the fair rate of return be higher than the 9.34 percent cost of equity recommended by OCA witness Eastman.

III. RATE BASE

Q. DO YOU HAVE ANY PROPOSED ADJUSTMENTS TO RATE BASE?

A. Yes. CUPA included several adjustments to plant additions based upon historical average level of annual spending, rather than on specific projects. There are not designated start or completion dates for the proposed plant additions. Given the current economic climate, I recommend that only projects with definitive start and completion

[5] CUPA's uncollectible accounts increased 473 percent in 2020 compared to the average in the 4 years 2016-2019. CUPA Response to OCA-II-12.

dates within the test period be included as plant additions. As a result, the following plant additions were removed from wastewater:

- Treatment and Disposal Equipment FTY: $431,366 ($152,611 allocated for Penn Estates Consent Order Agreement Upgrades was not removed from plant additions);
- Treatment and Disposal Equipment FPFTY: $449,899;
- Structural Improvement and Collection Equipment FTY: $108;
- Structural Improvement and Collection Equipment FPFTY: $113;
- Power Generation Equipment FTY: $699;
- Power Generation Equipment FPFTY: $104,741; and
- Other Plant Tangibles FTY: $858.

The total adjustment to plant additions for wastewater is $987,784 and is reflected on Schedule SLS-6. As a result of the adjustment to plant additions, there is also a corresponding adjustment made to depreciation expense on Schedule SLS-4 and accumulated depreciation on Schedule SLS-6. My recommended adjustment to depreciation expense is $23,640 and my recommended adjustment to accumulated depreciation is $34,458. The accumulated depreciation adjustment is larger to reflect the adjustment for the FTY and the FPFTY, while the depreciation adjustment is only for the FPFTY. This was determined by utilizing the depreciation rates provided in the Company's response to I&E-RB-1. The following depreciation rates were used, based upon the plant equipment:

- Treatment and Disposal Equipment and Other Plant Tangibles: 2.5%;
- Structural Improvement and Collection Equipment: 2.2%; and
- Power Generation Equipment: 1.5%.

IV. SALARIES

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE COMPANY'S SALARY EXPENSE.

A. When determining a revenue requirement for the FPFTY, expenses should be adjusted for known and measurable costs. Costs such as standard salary increases and a position vacancy that is expected to be filled can be included as part of the adjustment to the HTY and FTY to determine the FPFTY expense. However, the addition of positions and increases based on merit, promotions or a manager's discretion are not known and measurable. Additionally, since its last rate case, CUPA has increased its annual salary increase from 3 percent to 4 percent. However, as the Company was unable to produce evidence of this policy change, I have maintained the 3 percent annual salary increase utilized in the Company's prior rate case. Maintaining the historic, 3 percent across-the-board increase is also reasonable given the continued financial hardships as a result of the COVID-19 pandemic, discussed above. Furthermore, I have removed any projected annual increases to vacant positions, as they are not currently filled and will not receive increases until they are filled. To reflect this change, I adjusted the salary expense from the FTY to reflect a 3 percent salary increase, except in cases where there is a position vacancy and in such cases I have subsequently adjusted the Pension benefits accordingly. I utilized the FTY, as those salaries are already in effect and thus are known and measurable.

In total, I recommend that the FPFTY salary expense be adjusted by $118,594. As a result of the adjustment to salary expense, I recommend an adjustment to increase payroll taxes by $1,381 and decrease employee pension and benefits by $13,886. Based upon the Company's allocation, I adjusted water by decreasing salary expense by $54,304, decreasing employee pension and benefits by $6,359, and increasing the payroll tax expense by $632. I adjusted wastewater by reducing salary expense by $64,290, reduced employee pension and benefits by $7,528, and increased payroll taxes by $749. These adjustments are reflected on Schedule SLS-7.

V. CHEMICAL

Q. WHAT IS THE COMPANY'S REQUESTED CHEMICAL EXPENSE FOR FPFTY?

A. The Company projected that in the FPFTY the total chemical costs for both water and wastewater services will be $243,104. Based upon the Company's equivalent residential customer (ERC) allocation, $113,899 is allocated to water services and $129,205 is allocated to wastewater services.

Q. DO YOU AGREE WITH THE COMPANY'S FORECAST FOR CHEMICAL EXPENSE?

A. No. First, CUPA is projecting to increase its chemical expense between the HTY and FPFTY by 45 percent; however, the Company does not identify any increases in any particular chemical from prior years or state why additional chemicals will be needed beyond citing the acquisition of Tamiment in 2019. Second, after reviewing the projected monthly expenses for chemicals as projected by the Company, the purchases are projected to be more frequent and larger than they historically have been, even when including the HTY which reflects an entire year of operation with Tamiment. No information has been provided by the Company to support larger purchases of chemicals during the FPFTY. Based on the fluctuations in usage from year to year, I recommend that a three-year normalization be used to project the total chemical expense that is allocated between water and wastewater services. I do not see an issue with using an average expense, despite the addition of Tamiment, as the purchase of chemicals in the HTY (2020) was lower than in 2019.

Q. WHAT IS YOUR ADJUSTMENT TO THE CHEMICAL EXPENSES ALLOCATED TO WATER AND WASTEWATER?

A. Using a three-year average and the Company's ERC percentages provided in response to OCA-II-8, I recommend reducing the chemical expense allocated to water by $42,352 and reducing the amount allocated to wastewater by $70,266. The calculation of the adjustment is provided on Schedule SLS-8.

VI. ENGINEERING FEES

Q. WHAT IS THE COMPANY'S FORECASTED ENGINEERING FEE EXPENSE IN THE FPFTY?

A. The Company projected that in the FPFTY the total engineering fee expense for both water and wastewater services will be $21,737. Based upon the Company's ERC allocation, $9,953 is allocated to water services and $11,784 is allocated to wastewater services.

Q. DO YOU AGREE WITH THE COMPANY'S PROJECTED ENGINEERING FEE EXPENSE?

A. No, I do not. The HTY expenses includes irregular expenses that are not incurred on an annual basis, such as permit negotiations and renewals for permits obtained approximately every five years. Based on my review of the general ledger for 2018 through 2020, I determined that $31,528 of the $44,372 in HTY engineering fee expenses are not incurred on an annual basis and should be normalized. With the normalized level of expense for the HTY removed, I then averaged the remaining engineering fee expense for 2018 through 2020 and determined it to be $8,755. I then added this to the 5-year normalized engineering expense of $6,306, to match the permit cycle. The sum, $15,060, is more representative of the projected engineering fee expense, based on historical expenses, than the Company's projection.

Q. WHAT IS YOUR ADJUSTMENT TO THE ENGINEERING FEE EXPENSE?

A. Based upon my recommended level of $15,060 for the engineering fee expense, I recommend a $6,677 reduction to the Company's claim. Using the Company's ERC percentages to allocate the total FPFTY engineering fee expense reduction, $3,057 would be allocated to water services and the remainder, $3,620, would be allocated to wastewater services. This adjustment is reflected on Schedule SLS-9.

VII. TESTING, METER READING, AND MISCELLANEOUS EXPENSE

Q. WHAT IS THE COMPANY'S FORECASTED TESTING, METER READING, AND MISCELLANEOUS EXPENSE IN THE FPFTY?

A. The Company projected that in the FPFTY the total testing, meter reading, and miscellaneous expense for both water and wastewater services will be $108,646. Based upon the Company's ERC allocation and allocation of company-specific costs, $43,343 is allocated to water services and $65,303 is allocated to wastewater services.[6]

Q. DO YOU AGREE WITH THE COMPANY'S PROJECTED EXPENSE?

A. No, I do not. The individual expenses within the testing, meter reading, and miscellaneous expense account appear to be overstated in comparison to historical costs. Overall, in the HTY, the expense was $83,114 and the Company is seeking to increase the expense by $25,532 by the FPFTY.

The Company cites in response to I&E-RE-19-D that the main driver of the variances is related to the acquisition of Tamiment in 2019; however, the HTY should have captured the expenses related to Tamiment, as the Company had a full operating

[6] Per the Company's response to I&E-RE-19-C, CUPA allocated meter reading, water and safe drinking water test expenses to water only and testing for sewer to wastewater. Otherwise, the costs are allocated based upon the ERC.

year post-acquisition. An example of this is the Test – Sewer expense in the HTY which was $12,201; however, in the FPFTY, the Company projects the expenses to be $43,519. After reviewing individual cost categories within the expense, I recommend utilizing the historical three-year average to project this account for the FPFTY. If the Company has specific support for individual increases, it has not provided that support.

Q. WHAT IS YOUR ADJUSTMENT TO THE TESTING, METER READING, AND MISCELLANEOUS EXPENSE?

A. Based upon my recommendation to use the three-year average, I recommend that the testing, meter reading and miscellaneous expense level for the FPFTY be $96,954, which is $11,692 less than the Company's claim. I used the three-year average of water and wastewater expenses, individually, to determine my recommendation for the FPFTY to allow for company-specific costs to be allocated correctly. Therefore, for the FPFTY, I recommend allocating $49,838 to water services and allocating the remainder, $46,752, to wastewater services. This adjustment is reflected on Schedule SLS-10.

VIII. MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE

Q. WHAT IS THE COMPANY'S FORECASTED MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE IN THE FPFTY?

A. The Company projected that in the FPFTY the total materials, supplies, and other maintenance expense for both water and wastewater services will be $251,500. Based upon the Company's ERC allocation, $116,943 is allocated to water services and $134,556 is allocated to wastewater services.

Q. DO YOU AGREE WITH THE COMPANY'S PROJECTED EXPENSE?

A. While I do not oppose the Company's claim, when reviewing the support for the claim in the Company's response to I&E-RE-13-C, I was unable to confirm the amount claimed. The response to I&E-RE-13-C identifies a total of $221,091 in expenses for the FPFTY. That amount excludes sludge hauling as that is a separate expense, which has already been accounted for. If the Company is able to provide evidence that the sludge hauling is not double counted to support its original claim of $251,000, I do not oppose including the entire claim; however, until then I will use the support provided in the interrogatory response identified above to determine the expense for the FPFTY.

Q. WHAT IS YOUR ADJUSTMENT TO THE MATERIALS, SUPPLIES, AND MAINTENANCE EXPENSE?

A. Based upon my recommendation, the materials, supplies, and maintenance expense should be $221,091, which is $30,409 less than the Company's claim. Using the Company's allocation in I&E-RE-13-C, $116,994 should be allocated to water services and the remainder, $104,147, should be allocated to wastewater services (see Schedule SLS-4). As a result, this expense is only adjusted for wastewater as the water operations reflects the proper allocation.

IX. TAXES AND TAXES OTHER THAN INCOME

Q. AS THE RESULT OF YOUR RECOMMENDED CHANGES WERE TAXES AND TAXES OTHER THAN INCOME IMPACTED?

A. Yes. Taxes are dependent upon revenue, and taxes other than income are dependent upon revenue, plant in service, and payroll taxes. Since these are factors for which I recommended adjustments, I have adjusted both taxes and taxes other than income. These adjustments are shown on Schedules SLS-11 and SLS-14. These two expenses should be altered, depending upon which recommendations the Commission adopts.

X. CASH WORKING CAPITAL

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE COMPANY'S CLAIM FOR CASH WORKING CAPITAL.

A. The Company calculated its cash working capital based upon 12.5 percent, or one-eighth of the operations and maintenance ("O&M") expense and taxes other than income. I adopt this methodology, except that, as shown on Schedule SLS-12, I have adjusted the cash working capital to $190,008 for water and $213,932 for wastewater, accounting for my recommended adjusted O&M expenses. This adjustment should be modified to reflect the total adjustments to O&M and taxes as accepted by the Commission.

XI. ALLOWANCE FOR UNCOLLECTIBLE ACCOUNTS

Q. WHAT IS THE ADJUSTMENT YOU ARE PROPOSING TO THE ALLOWANCE FOR UNCOLLECTIBLE ACCOUNTS?

A. I calculated the allowance for uncollectible accounts by multiplying the proposed revenue calculated in SLS-1 by CUPA's proposed percent of uncollectible revenue of 0.73 percent. Using this calculation, I adjusted the allowance to $19,369 for water and $24,223 for wastewater. This adjustment is reflected on Schedule SLS-13.

XII. RATE CASE EXPENSE

Q. DO YOU AGREE WITH THE COMPANY'S POSITION TO AMORTIZE THE RATE CASE EXPENSE?

A. No, I do not. Since the rate case expense is ongoing and occurs at irregular intervals, the expense should be normalized instead of amortized. There is Commission precedent supporting the normalization of rate case expense over the average timeframe

that the utility has historically filed rate cases. In CUPA's case that is 4.6 years, so I will accept the 4-year period that CUPA utilized. As I do not recommend an adjustment to the period, my recommendation does not result in an adjustment to CUPA's proposed rate case expense. That said, the Commission should require CUPA to normalize the rate case expense instead of amortize it.

Q. WHAT LEVEL OF EXPENSE DO YOU RECOMMEND BE NORMALIZED FOR RATE CASE EXPENSE?

A. I recommend that CUPA should update its rate case expense to reflect actual rate case expense to date and its projection for rate case expenses through the end of the proceeding as part of its rejoinder testimony, so that the final amount to be normalized will reflect primarily actual expenses rather than projected expenses.

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does. I reserve the right to supplement this testimony as appropriate.

APPENDIX A

Resume of Stacy L. Sherwood

STACY L. SHERWOOD

Ms. Sherwood is an Economist at Exeter Associates, Inc. At Exeter, Ms. Sherwood develops utility service assessments, provides bill and rate analysis, and assesses and evaluates the effectiveness of energy conservation and efficiency programs and smart meter implementation plans. She also conducts analysis on renewable energy initiatives and life-cycle cost analysis of renewable energy projects. Prior to joining Exeter, Ms. Sherwood worked on energy efficiency with the State of Maryland.

Education

B.A. (Economics, Business, and Accounting) – McDaniel College, 2009

Previous Employment

2013-2015	Assistant Director Maryland Public Service Commission Baltimore, Maryland
2011-2013	Regulatory Economist II Maryland Public Service Commission Baltimore, Maryland
2009-2011	Regulatory Economist I Maryland Public Service Commission Baltimore, Maryland

Professional Experience

Ms. Sherwood's work at Exeter is primarily related to energy efficiency, renewable energy, automated metering infrastructure, cost recovery, and revenue requirements. Ms. Sherwood has successfully worked with utilities, state energy offices, attorney general's offices, consumer advocates, and commission staffs. Ms. Sherwood provides ongoing support to the Arkansas Office of the Attorney General and the Pennsylvania Office of Consumer Advocates regarding their respective states' utility energy efficiency programs, including analysis of utility energy efficiency plans and proposed plan amendments; analysis of issues raised during stakeholder meetings; review of riders and surcharges related to cost-recovery; and provide recommendations on technical and policy-related matters. She has contributed to several publications issued by the Maryland Power Plant Research Program regarding electricity in Maryland, including load forecasting, analysis of policy impacts, and inclusion of renewable resources. Additionally, Ms. Sherwood has worked with the Department of Defense to study the demand response potential at various Army Garrisons throughout the United States by conducting on-site visits and performing analysis of electric bills.

At the Maryland Public Service Commission, Ms. Sherwood performed analysis on the EmPOWER Maryland energy efficiency and demand response programs, the Exelon Customer Investment Fund, and served as lead analyst for the EmPOWER Maryland limited income programs implemented by the Maryland Department of Housing and Community Development. For those initiatives, she developed reporting templates and guidelines; oversaw evaluation, measurement, and verification of program results; and recommended and ensured compliance with policies. Additionally, Ms. Sherwood assisted with the development of regulations proposed before the Commission to implement the 2013 Maryland Offshore Wind Energy Act.

Publications and Consulting Reports

Fort Riley Assessment of Utility Contracts and Costs, on behalf of the U.S. Army Installation Management Command and Army Commercial Utilities Program, April 2019 (with Steven Estomin of Exeter Associates, Inc.).

Sierra Army Depot Assessment of Utility Contracts and Costs, on behalf of the U.S. Army Installation Management Command and Army Commercial Utilities Program, March 2019 (with Steven Estomin of Exeter Associates, Inc.).

Fort Riley Assessment of Demand Response Opportunities, on behalf of the U.S. Army Office Chief of Staff for Installation Management, January 2018 (with Christina Mudd of Exeter Associates, Inc. and Jim Clark of Clark Energy, Inc.).

Fort Gordon Assessment of Demand Response Opportunities, on behalf of the U.S. Army Office Chief of Staff for Installation Management, June 2017 (with Christina Mudd of Exeter Associates, Inc. and Jim Clark of Clark Energy, Inc.).

Cumulative Environmental Impact Report, on behalf of the Power Plant Research Program, Maryland Department of Natural Resources, December 2016 (with Steven Estomin, Kevin Porter, Rebecca Widiss, and Nicholas DiSanti of Exeter Associates, Inc.; Environmental Resources Management, Inc.; Versar, Inc.; Metametrics, Inc.; Spectrum Environmental Services, Inc.; and RGM Incorporated).

Long-Term Electricity Report for Maryland, on behalf of the Power Plant Research Program, Maryland Department of Natural Resources, December 2016 (with Steven Estomin, Kevin Porter, Rebecca Widiss, Nicholas DiSanti, Cali Clark, and Laura Miller of Exeter Associates, Inc.).

Fort Stewart Assessment of Demand Response Opportunities, on behalf of the U.S. Army Office Chief of Staff for Installation Management, September 2016 (with Christina Mudd and Felipe Salcedo of Exeter Associates, Inc. and Jim Clark of Clark Energy, Inc.).

Edwards Air Force Base Feasibility of a Geothermal Project, on behalf of the U.S. Air Force Civil Engineer Center, April 2016 (with Christina Mudd and Kevin Porter of Exeter Associates, Inc.).

Expert Testimony

Before the Louisiana Public Service Commission, Docket No. U-35877 Pointe Coupee Electric Membership Corporation *Application to Acquire and Install an Automated Metering System and Request for Cost Recovery and Related Relief,* February 2021, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020818, *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020830, *Petition of PECO Energy Company for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2020-3020824, *Petition of PPL Electric Utilities for Approval of its Energy Efficiency and Conservation Phase IV Plan*, January 2021, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Louisiana Public Service Commission, Docket No. U-35707 Southwest Louisiana Electric Membership Corporation *Application for Approval to Acquire and Install an Automated Metering System and Request for Cost Recovery and Related Relief,* December 2020, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3020919 *Pennsylvania Public Utility Commission v. Audubon Water Company*, November 2020, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3020256
Pennsylvania Public Utility Commission v. City of Bethlehem – Water Department, November 2020, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Louisiana Public Service Commission, Docket No. U-35456 Concordia Electric Cooperative Inc. *Application for Certification of a Replacement Advanced Metering System and Approval of Related Financing*, November 2020, for the Louisiana Public Service Commission Staff. Testified regarding the implementation of automated metering infrastructure to replace current meters. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2020-3019612
Pennsylvania Public Utility Commission v. Reynolds Disposal Company, October 2020, for the Pennsylvania Office of Consumer Advocate. Participated in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3010955
Pennsylvania Public Utility Commission v. City of Lancaster – Sewer Fund, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008208
Pennsylvania Public Utility Commission v. Wellsboro Electric Company, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008209
Pennsylvania Public Utility Commission v. Valley Energy, Inc, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008212,
Pennsylvania Public Utility Commission v. Citizens' Electric Company of Lewisburg, PA, October 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3009559,
Pennsylvania Public Utility Commission v. Eaton Sewer & Water Company, Inc. – Wastewater Division, August 2019, for the Pennsylvania Office of Consumer Advocate. Participate in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3009567,
Pennsylvania Public Utility Commission v. Eaton Sewer & Water Company, Inc. – Water Division, August 2019, for the Pennsylvania Office of Consumer Advocate. Participate in mediation regarding reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008947, *Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Water Division*, July 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3008948, *Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Division*, July 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2019-3006904, *Pennsylvania Public Utility Commission v. The Newtown Artesian Water Company (Supplement No. 136 to Tariff Water – Pa. P.U.C. No. 9)*, March 2019, for the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the overall revenue increase. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3006814, *Pennsylvania Public Utility Commission v. UGI Utilities, Inc – Gas Division (Utility Code 123100, Filed Tariff Gas- Pa. P.U.C. Nos. 7 and 7S)*, January 2019, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of its proposed consolidated natural gas energy efficiency plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2018-3004144, *Petition of UGI Utilities, Inc. – Electric Division for Approval of Phase III of its Energy Efficiency and Conservation Plan*, August 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of proposed Plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3001307, *Pennsylvania Public Utility Commission v. Hidden Valley Utility Services, L.P. – Wastewater (General Rate Increase Filed Pursuant to 66 PS. CS 1308, Including Answers to 52 PA. Code 53.52)*, April 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. R-2018-3001306, *Pennsylvania Public Utility Commission v. Hidden Valley Utility Services, L.P. – Water (General Rate Increase Filed Pursuant to 66 PS. CS 1308, Including Answers to 52 PA. Code 53.52)*, April 2018, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the reasonableness of the overall revenue increase.

Before the Pennsylvania Public Utilities Commission, Docket No. P-2015-2497267, *Petition of Duquesne Light Company for Approval of its Smart Meter Procurement and Installation Plan*, February 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding the inclusion of additional costs related to the Plan's implementation.

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2477174, *Petition of UGI Utilities, Inc. – Electric Division for Approval of Phase II of its Energy Efficiency and Conservation Plan*, February 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of proposed Plan. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2515642, *Petition of PPL Electric Utilities for Approval of its Energy Efficiency and Conservation Phase II Plan*, January 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Pennsylvania Public Utilities Commission, Docket No. M-2015-2515375, *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation Phase II Plan*, January 2016, on behalf of the Pennsylvania Office of Consumer Advocate. Testified regarding reasonableness of the proposed Plan and its compliance with Pennsylvania Act 129. (Case settled prior to cross-examination.)

Before the Public Utilities Commission of Rhode Island, Docket No. 4595, *Newport Water Division – Rate Application to Collect Additional Revenues of $1,304,595 for a Total Cost of Service of $20,151,440*, December 2015, on behalf of the Division of Public Utilities and Carriers. Testified regarding reasonableness of the overall rate revenue increase.

Before the Maryland Public Service Commission, Case No. 9311, *In the Matter of the Application of Potomac Electric Power Company for an Increase in its Retail Rates For the Distribution of Electric Energy*, April 2013, on behalf of the Maryland Public Service Commission Staff. Testified regarding the inclusion of advanced metering infrastructure meters and energy advisor and engineer positions in rates.

APPENDIX B

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
	)	
v.	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
	)	
and	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

SCHEDULES ACCOMPANYING THE

DIRECT TESTIMONY

OF

STACY L. SHERWOOD

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Volumetric Revenue					
3	Residential	$ 1,312,552		$ 1,312,552		$ 1,312,552
4	Commercial	18,296		18,296		18,296
5	Flat/Base Rate Revenue					
6	Residential	687,585		687,585		687,585
7	Commercial	17,562		17,562		17,562
8	Availability	35,394		35,394		35,394
9	Fire Hydrant	24,831		24,831		24,831
10	Other Operating Revenues					
11	Forfeited Discounts	(1,407)	$ 7,544	6,137		6,137
12	Miscellaneous Service Revenues	4,905	(1,095)	3,810		3,810
13	Purchased Services	-	-	-		-
14	Accruals	(56,290)	56,290	-		-
15	Gross Operating Revenues	2,043,428		2,106,167	547,120	2,653,287
16	Allowance for Uncollectible Accounts	(17,369) (1)		(17,369)	(2,204)	(19,573)
17	Net Operating Revenues	$ 2,026,059	$ 62,739	$ 2,088,798	$ 549,324	$ 2,638,122
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	396,201	(54,304)	341,897		341,897
21	Employee Pensions & Benefits	111,990	(6,359)	105,631		105,631
22	Purchased Power	106,110		106,110		106,110
23	Purchased Water	217,663		217,663		217,663
24	Chemicals	113,899	(42,352)	71,547		71,547
25	Materials, Supplier, and Other Maintenance Expenses	116,943		116,943		116,943
26	Engineering Fees	9,953	(3,057)	6,896		6,896
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	3,815		3,815		3,815
29	Contractual Services - Other	272,323		272,323		272,323
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	22,580		22,580		22,580
32	Insurance - Other	50,734		50,734		50,734
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	45,196		45,196		45,196
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	36,709		36,709		36,709
36	Regulatory Commission Expenses - Other	-		-		-
37	Testing, Meter Reading, and Miscellaneous Expenses	43,343	6,495	49,838		49,838
38	Total Operating Revenue Deductions	$ 1,547,459		$ 1,447,883		$ 1,447,883
39						
40	Operating Income Before Income Taxes	478,600		640,915		1,190,239
41						
42	Operating Expenses					
43	Depreciation	375,543		375,543		375,543
44	Amortization of CIAC	(30,502)		(30,502)		(30,502)
45	Amortization of PAA	(36,069)		(36,069)		(36,069)
46	Taxes Other than Income	79,357	(7,177)	72,180		72,180
47		388,329		381,152		381,152
48	Income Taxes					
49	Federal Income Tax	119,283	(11,799)	107,484		107,484
50	State Income Tax	63,043	(6,236)	56,807		56,807
51		182,326		164,291		164,291
52						
53	Net Operating Income	$ (92,055)	$ (62,049)	$ 95,472	$ 549,324	$ 644,796
54						
55	Rate Base	$ 9,093,162	(11,532)	$ 9,081,630		$ 9,081,630
56						
57	Return On Rate Base	-1.01%		1.05%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	
1	Rate Base	$ 9,081,630	(1)
2	Required Rate of Return	7.10%	(2)
3			
4	Net Operating Income Required	$ 644,796	
5	Net Operating Income at Present Rates	97,676	
6			
7	Required Change in Company Revenue	$ 547,120	

Notes:

(1) Schedule SLS-3
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,088,798	$ 1,547,459	308,972	$ 79,357	$ 153,010
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,204)				
5	Salaries & Wages		(54,304)			
6	Employee Pension and Benefits		(6,359)			
7	Engineering Fees		(3,057)			
8	Testing, Meter Reading, and Miscellaneous		6,495			
9	Payroll Tax				(7,177)	
10	Chemicals		(42,352)			
11	Total OCA Adjustments	$ (2,204)	$ (99,576)	$ -	$ (7,177)	
12						
13	Total Adjusted Income Before Income Taxes	$ 2,086,594	$ 1,447,883	$ 308,972	$ 72,180	$ 257,559

Community Utilities of Pennsylvania Inc. - Water Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022		OCA Recommended Rate Base	OCA Adjustment for Rate Base	
1	Original Cost of Utility Plant in Service	$ 13,579,565			$ 13,579,565	
2	Less: Accumulated Depreciation	4,948,852	(1)		4,948,852	
3	Subtotal	8,630,713	(1)	-	8,630,713	
4						
5	Deduct					
6	Contributions in Aid of Construction	1,234,996			1,234,996	
8	Net Plant Acquisition Adjustment	719,891			719,891	
9	Net Utility Plant	6,675,826		-	6,675,826	
10						
11	Less					
12	Customer Deposits	1,542			1,542	
13	Accumulated Deferred Income Taxes	454,825			454,825	
14						
15	Add					
16	Proforma Level of Plant	2,580,058			2,580,058	
17	Deferred Charges	93,189			93,189	
18	Cash Working Capital	200,456		(11,532)	188,924	(1)
19						
20	Total Rate Base	$ 9,093,162		$ (11,532)	$ 9,081,630	

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Flat/Base Rate Revenue					
3	Residential	$ 2,288,594		$ 2,288,594		$ 2,288,594
4	School	16,922		16,922		16,922
5	Availability	37,170		37,170		37,170
6	Commercial	13,857		13,857		13,857
7	Volumetric Revenue					
8	Residential	304,822		304,822		304,822
9	Commercial	3,027		3,027		3,027
10	Other Operating Revenues					
11	Forfeited Discounts	(1,789)	$ 9,124	7,335		7,335
12	Miscellaneous Service Revenues	1,180	$ (507)	673		673
13	Purchased Services	-		-		-
14	Accruals	(71,652)	$ 71,652	-		-
15	Gross Operating Revenues	2,592,131		2,672,400	645,820	3,318,220
16	Allowance for Uncollectible Accounts	(26,658) (1)		(26,658)	(2,449)	(29,107)
17	Net Operating Revenues	$ 2,565,473	$ -	$ 2,645,742	$ 648,269	$ 3,294,011
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	$ 469,108	(64,290)	$ 404,818		$ 404,818
21	Employee Pensions & Benefits	132,598	(7,528)	125,070		125,070
22	Sledge Hauling & Sewer Rodding	226,788		226,788		226,788
23	Purchased Power	125,637		125,637		125,637
24	Chemicals	129,205	(70,266)	58,939		58,939
25	Materials, Supplier, and Other Maintenance Expenses	134,556	(30,409)	104,147		104,147
26	Engineering Fees	11,784	(3,620)	8,164		8,164
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	4,517		4,517		4,517
29	Contractual Services - Other	322,435		322,435		322,435
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	26,736		26,736		26,736
32	Insurance - Other	60,070		60,070		60,070
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	53,513		53,513		53,513
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	43,464		43,464		43,464
36	Regulatory Commission Expenses - Other	-		0		0
37	Testing, Meter Reading, and Miscellaneous Expenses	65,303	(18,551)	46,752		46,752
38	Total Operating Revenue Deductions	1,805,714		1,611,051		$ 1,611,051
39						
40	Operating Income Before Income Taxes	759,759		1,034,691		1,682,959
41	.					
42	Operating Expenses					
43	Depreciation	665,056	(23,640)	641,416		641,416
44	Amortization of PAA	(58,573)		(58,573)		(58,573)
45	Taxes Other Than Income Taxes	101,940 (2)	(1,533)	100,407		100,407
46	Amortization of CIAC	(86,762)		(86,762)		(86,762)
47		621,661		596,488		596,488
48	Income Taxes					
49	Federal Income Tax	174,497	(35,619)	138,878		138,878
50	State Income Tax	92,224	(18,825)	73,399		73,399
51		266,721		212,277		212,277
52						
53	Net Operating Income	$ (128,623)	$ (194,663)	$ 225,925	$ 648,269	$ 874,194
54						
55	Rate Base	$ 13,302,091	(989,499)	$ 12,312,592		$ 12,312,592
56						
57	Return On Rate Base	-0.97%		1.83%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates
(2) Supporting Schedule No. 5

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	
1	Rate Base	$ 12,312,592	(1)
2	Required Rate of Return	7.10%	(2)
3			
4	Net Operating Income Required	$ 874,194	
5	Net Operating Income at Present Rates	228,374	
6			
7	Required Change in Company Revenue	$ 645,820	

Notes:

(1) Schedule SLS-3
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,645,742	$ 1,805,714	519,721	$ 101,940	$ 218,367
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,449)				
5	Salaries & Wages		(64,290)			
6	Employee Pension and Benefits		(7,528)			
7	Engineering Fees		(3,620)			
8	Materials, Supplier, and Other Maintenance Expenses		(30,409)			
9	Testing, Meter Reading, and Miscellaneous		(18,551)			
10	Payroll Tax				(1,533)	
11	Chemicals		(70,266)			
12	Total OCA Adjustments	$ (2,449)	$ (194,663)	$ -	$ (1,533)	$ -
13						
14	Total Adjusted Income Before Income Taxes	$ 2,643,293	$ 1,611,051	$ 519,721	$ 100,407	$ 412,113

Community Utilities of Pennsylvania Inc. - Wastewater Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022	OCA Adjustment for Rate Base	OCA Recommended Rate Base	
1	Original Cost of Utility Plant in Service	$ 21,800,965	$ (987,784)	$ 20,813,181	
2	Less: Accumulated Depreciation	10,455,892	34,458	(10,421,434)	
3	Subtotal	11,345,073		10,391,747	
4					
5	Deduct				
6	Contributions in Aid of Construction	1,775,060		1,775,060	
8	Net Plant Acquisition Adjustment	1,057,608		1,057,608	
9	Net Utility Plant	8,512,405	-	7,559,079	
10					
11	Less				
12	Customer Deposits	1,825		1,825	
13	Accumulated Deferred Income Taxes	774,535		774,535	
14					
15	Add				
16	Proforma Level of Plant	5,272,944		5,272,944	
17	Deferred Charges	66,921		66,921	
18	Cash Working Capital	226,181	(36,173)	190,008	(1)
19					
20	Total Rate Base	$ 13,302,091	$ (989,499)	$ 12,312,592	

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12

Community Utilities of Pennsylvania Inc.

Adjustment to Salarires & Wages - Employees and Employee Pensions and Benefits
For the Rate Year Ending December 31, 2022

Line No.					Water Allocation (45.79%)	Wastewater Allocation (54.21%)
1	**Salaries & Wages - Employees**					
2	FTY Salary	$	909,431	(1)		
3	Less: Vacant Positions		65,755	(2)		
4	Salary Subject to Annual Increase		843,676			
5	3% Increase Annual Increase		25,310			
6	Salary with Increase		868,986			
7	Add: Vacant Positions		65,755			
8	FPFTY Salaries Per OCA		934,741			
9	FPFTY Salaries Per Company		1,053,335	(1)		
10	Variance	$	(118,594)		$ (54,304)	$ (64,290)
11						
12	**Payroll Tax**					
13	FPFTY Salary Increase	$	25,310			
14	FICA Adjustment (7.65%)		1,936			
15	Payroll Tax Adjustment FTY to FPFTY	$	1,936			
16	FTY Payroll Tax		68,265			
17	FPFTY Payroll Tax Per OCA	$	70,201			
18	FPFTY Payroll Tax Per Company	$	68,820	(3)		
19	Variance	$	1,381		$ 632	$ 749
20						
21	**Employee Pension and Benefits**					
22	FPFTY Salary Increase	$	25,310			
23	Non-Elective 401k Contribution (3%)	$	759			
24	Company 401k Match (4%)		1,012			
25	Pension and Benefits Adjustment FTY to FPFTY	$	1,772			
26	FTY Pension and Benefits		228,930	(1)		
27	FPFTY Pension and Benefits Per OCA	$	230,702			
28	FPFTY Pension and Benefits Per Company		244,588	(1)		
29	Variance	$	(13,886)		$ (6,359)	$ (7,528)

Notes:

(1) Direct Testimony of Perry Brown Schedule WP-PB-02 Salaries and Wages Forecast for Water and Wastewater
(2) Company Response to I&E-RE-4-D Salary & Benefits 2021 & 2022
(3) Does not match the Company's Response to I&E-RE-4-D Salary & Benefits 2021 & 2022 calculation of payroll tax, which results in an increase

Community Utilities of Pennsylvania Inc.

Adjustment for Chemical Expense
For the Rate Year Ending December 31, 2022

Line No.		5480 Chlorine		5490 Other Treatment Chemicals		5485 Odor Control Chemicals		Total Annual Chemical Expense
1	2018	$ 7,256	(1)	$ 153,460	(1)	$ 2,692	(1)	$ 163,408
2	2019	12,311	(1)	105,772	(1)	7,690	(1)	125,773
3	2020	3,963	(1)	45,437	(1)	1,260	(1)	50,660
4	3-year Average	$ 7,843		$ 101,556		$ 3,881		$ 113,280
5								
6								

			Water		Wastewater	
7						
8		**Total 5480 Chlorine Expense**	**ERC Allocation Weight**	**Total 5480 Chlorine Expense for Water**	**ERC Allocation Weight**	**Total 5480 Chlorine Expense for Wastewater**
9	Amount Per Company	$ 7,843	100.00%	$ 7,843	0.00%	$ -
10	Amount Per OCA	16,448	100.00%	16,448	0.00%	0
11	OCA Adjustment			8,605		0
8		**Total 5485 Odor Control Expense**	**ERC Allocation Weight**	**Total 5485 Odor Control Expense for Water**	**ERC Allocation Weight**	**Total 5485 Odor Control Expense for Wastewater**
9	Amount Per Company	$ 13,820	0.00%	$ -	100.00%	$ 13,820
10	Amount Per OCA	3,881	0.00%	0	100.00%	3,881
11	OCA Adjustment			0		(9,939)
8		**Total Chemicals 5490 Other Treatment Chemicals**	**ERC Allocation Weight**	**Total 5490 Other Treatment Chemicals Expense for Water**	**ERC Allocation Weight**	**Total 5490 Other Treatment Chemicals Expense for Wastewater**
9	Amount Per Company	$ 212,839	45.79%	$ 97,459	54.21%	$ 115,380
10	Amount Per OCA	101,556	45.79%	46,503	54.21%	55,054
11	OCA Adjustment			(50,956)		(60,326)
	Total OCA Adjustment			$ (42,352)		$ (70,266)

Notes:

(1) Per the Company's response to OCA Set II-8 Chemical Expense 2021 & 2022 workbook

Community Utilities of Pennsylvania Inc.

Adjustment for Engineering Fee Expense
For the Rate Year Ending December 31, 2022

Line No.		Annual Expense		Adjustment to Remove Irregular Expenses		Adjusted Annual Expense
1	2018	$ 3,243.75	(1)	$ -		$ 3,243.75
2	2019	10,176	(1)			10,176
3	2020	44,372	(1)	31,528	(1)	12,844
4	3-year Average					$ 8,755
5	Normalization of Irregular Expenses (5 years)					6,306
	Amount Per OCA					$ 15,060
6						
7				Water		Wastewater
8		**Total Expense**		**ERC Allocation Weight**	**Total Expense for Water**	**ERC Allocation Weight**	**Total Expense for Wastewater**
9	Amount Per Company	$ 21,737		45.79%	$ 9,953	54.21%	$ 11,784
10	Amount Per OCA	15,060		45.79%	6,896	54.21%	8,164
11	OCA Adjustment				(3,057)		(3,620)

Notes:

(1) Per the Company's response to I&E-RE-1-14-A 2018-2020 Engineering

Community Utilities of Pennsylvania Inc.

Adjustment for Testing, Meter Reading, and Miscellaneous Expense
For the Rate Year Ending December 31, 2022

Line No.		Water Amount Per Company		Wastewater Amount Per Company
1	2018	$ 40,104	(1)	$ 40,247
2	2019	55,291	(1)	71,105
3	2020	54,120	(1)	28,904
4	3-year Average	$ 49,838		$ 46,752
5	Amount Per Company	43,343		65,303
6	OCA Adjustment	$ 6,495		$ (18,551)

Notes:

(1) Per the Company's response to I&E-RE-35-E&F Testing Meter Reading and Misc - 2018-2020

Community Utilities of Pennsylvania Inc.

Adjustments to Taxes Other Than Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	Rate	Amount Per OCA
1	**Water**			
2	Utility Commission Tax	$ 2,638,122	0.66%	$ 17,412
3	Real Estate Tax	16,159,623	0.14%	22,623
4	Payroll Taxes			32,145 (1)
5	Total			$ 72,180
6				
7				
8	**Wastewater**			
9	Utility Commission Tax	$ 3,294,011	0.66%	$ 21,740
10	Real Estate Tax	27,073,908	0.15%	40,611
11	Payroll Taxes			38,056 (1)
12	Total			$ 100,407

Notes

(1) Calculated on Schedule SLS-7 line 18 multiplied by water and wastewater allocation ratios

Community Utilities of Pennsylvania Inc.

Adjustments to Cash Working Capital
For the Rate Year Ending December 31, 2022

Line No.			Amount Per OCA
1	**Water**		
2	Maintenance and General Expenses	$	1,447,883
3	Taxes Other Than Income		72,180
4	Total	$	1,520,063
5			
6	Total Cash Working Capital	$	190,008
7			
8	**Wastewater**		
9	Maintenance and General Expenses	$	1,611,051
10	Taxes Other Than Income		100,407
11	Total	$	1,711,459
12			
13	Total Cash Working Capital	$	213,932

Community Utilities of Pennsylvania Inc.

Adjustment to Allowance for Uncollectible Accounts
For the Rate Year Ending December 31, 2022

Line No.		Water					
		Amount Per Present Rates		Amount Per OCA		OCA Adjustment	
1							
2							
3	Revenue	$ 2,043,428	(1)	$ 2,653,287	(2)		
4	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)		
5	Allowance for Uncollectible Accounts	$ (17,165)		$ (19,369)		$ (2,204)	
6							
7		**Wastewater**					
8		Amount Per Present Rates		Amount Per OCA		OCA Adjustment	
9							
10	Revenue	$ 2,592,131	(1)	$ 3,318,220	(4)		
11	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)		
12	Allowance for Uncollectible Accounts	$ (21,774)		$ (24,223)		$ (2,449)	

Notes:

(1) Direct Testimony of Perry Brown, Exhibit CUPAW EX PAB-1 p 2-3
(2) Schedule SLS-1
(3) Direct Testimony of Perry Brown, page 11, line 8
(4) Schedule SLS-4

Community Utilities of Pennsylvania Inc.

Adjustment to Federal and State Taxes
For the Rate Year Ending December 31, 2022

Line No.		Water	Wastewater
1	Total Revenue	$ 2,638,122	$ 3,294,011
2	Less:		
3	Operating Expenses	1,447,883	1,611,051
4	Depreciation and Amortization	308,972	496,081
5	Taxes Other Than Income	72,180	100,407
6	Interest Expense	240,451	351,748
7	Taxable Income	$ 568,636	$ 734,723
8			
9	**State Taxes**		
10	Taxable Income	568,636	734,723
11	State Tax Rate	9.99%	9.99%
12	FPFTY State Taxes	$ 56,807	$ 73,399
13			
14	**Federal Taxes**		
15	Taxable Income	$ 568,636	$ 734,723
16	Less: State Taxes	56,807	73,399
17	Federal Taxable Income	$ 511,829	$ 661,324
18	Federal Tax Rate	21%	21%
19	FPFTY Federal Taxes	$ 107,484	$ 138,878

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Stacy L. Sherwood, hereby state that the facts set forth in my Direct Testimony, OCA Statement 1, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 13, 2021 Signature: _____
*315544 Stacy L. Sherwood

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 2

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission v. Community Utilities of Pennsylvania, Inc.	Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

DIRECT TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

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Introduction

Q. Please state your name, business address and occupation.

A. My name is Noah D. Eastman. My business address is 555 Walnut Street, Forum Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate.

Q. Please describe your educational background and qualifications to provide testimony in this case.

A. I have a bachelor's degree in Economics with a Business Concentration from Shippensburg University. My educational background and qualifications are described in Appendix A.

Q. On whose behalf are you providing this testimony?

A. The Pennsylvania Office of Consumer Advocate (OCA).

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my direct testimony is to provide my recommendation for the appropriate overall rate of return to the Pennsylvania Public Utility Commission (PUC) for Community Utilities of Pennsylvania, Inc. (CUPA or Company), and respond to the Direct Testimony of Mr. Dylan D'Ascendis on behalf of CUPA.

Summary of Findings

Q. What was the recommendation of company witness D'Ascendis regarding the rate of return and its components?

A. Using the Discounted Cash Flow model, the Risk Premium Model, and the Capital Asset Pricing Model Mr. D'Ascendis recommends a rate of return of 7.58%, including a 10.35% return on equity component that includes a 100 basis point size adjustment. This, along with the recommended capital structure, is detailed below in Table 1, which is found on page 5 of CUPA Statement No. 5.

Type Of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.93%
Total	100.00%		7.57%

Table 1

Q. What is your recommended capital structure and costs of debt and equity for ratemaking purposes?

A. My recommendation is below in Table 2. I accept the proposed capital structure and cost of debt recommended by company witness D'Ascendis, and my return on equity estimate is 9.34%. My final rate of return recommendation is 7.10%.

	Percent	**Cost Rate**	**Cost of Money**
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Table 2[1]

[1] Page 1, Exhibit NDE-1

Cost of Capital Principles

Q. Please explain the cost of capital and its components.

A. The cost of capital is the return that investors expect to earn on investment in companies of similar risk profiles. This can be alternatively described as an opportunity cost, or the highest return on an alternative investment of that similar risk profile. The primary components of the cost of capital are capital structure, cost rates of debt and preferred stock, and the cost of common equity. When combined, the elements and resulting cost of capital helps to provide the revenue requirement, an integral piece in regulatory ratemaking.

Q. Please explain the cost of common equity, and its value in regulatory ratemaking.

A. The cost of common equity is the return that investors would expect to return on the investment in the stocks, or ownership, of companies facing similar risk. Like my explanation above, this is what is commonly referred to as opportunity cost. This number does have importance in regulatory ratemaking but is not the final measure to be considered when attempting to calculate a fair allowed return on equity.

Q. What is the main purpose of the cost of common equity when calculating a fair allowed return on equity?

A. The cost of common equity provides a good starting point for estimating a range and then making a final recommendation. The range begins with setting a minimum around the opportunity cost of common equity followed by adjustments to reflect any issues regarding quality of service, economic, or regulatory factors.

Q. Where should the maximum be set?

A. Setting a maximum is not required if the PUC has enough information to be able to accurately judge when rates will reach an unreasonable rate. However, as a rule the maximum should be set below the level of return that would be expected in more highly profitable and speculative enterprises. This is one of the major findings in Bluefield Water Works v. Public Service Comm'n, 262 U.S. 679 (1923).

Q. What were the findings of Bluefield Water Works v. Public Service Comm'n, 262 U.S. 679 (1923)?

A. The opinion of the court was:

> "A public utility is entitled to such rates as will permit it to earn a return on the value of the property it employs for the convenience of the public equal to that generally being made at the same time and in the same region of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures."

In short, the court found that utilities were entitled to a return similar to that of other utilities with similar risk profiles but is not entitled to a return equal to that of companies in non-similar industries facing different risk.

Q. What methods have you used to calculate the cost of capital?

A. I accept CUPA's proposed capital structure and debt cost, with those seen above. I calculated the cost rate of equity for ratemaking purposes using the constant growth

Discounted Cash Flow (DCF) Model, with the Capital Asset Pricing Model (CAPM) as a check on reasonableness. As CUPA is not a publicly traded company, nor is its parent publicly traded, all inputs will be derived from a proxy group of 7 regulated water and wastewater companies. Those companies are: American States Water Company, American Water Works Company, Inc., California Water Service Group, Essential Utilities, Inc., Middlesex Water Company, SJW Group, and York Water Company.

Return on Equity

Discounted Cash Flow Method

Q. Please explain what process led you to your DCF recommendation.

A. I used the Constant Growth DCF model. The dividend discount model and the Constant Growth DCF model are, respectively:

$$P_0 = \frac{D_1}{k - g} \qquad K = \frac{D_1}{P_0} + g$$

K = Common Equity Cost Rate
D_1 = The expected dividend at the end of period
P_0 = Current Market Price
g = the expected growth rate

After the derivation, the common equity cost rate is easily explained as the dividend yield plus the expected growth rate.

Q. What inputs did you use for your DCF model?

A. To calculate dividend yields, I used two methods to capture both historical and future expected returns on equity. The first method utilized the estimated growth in earnings per share (EPS) of the seven regulated water utilities that made up my proxy group. These EPS growth rates were assembled from Value Line Investment Surveys, Yahoo! Finance,

and Zack's Investment Research (Page 1, Exhibit NDE-2). With that, the most recent dividends of all seven companies along with the 90-day average closing price of their respective stocks were used to derive the dividend yield for my model (Page 3, Exhibit NDE-2). These dividend yields were adjusted to accommodate growth, so they were multiplied by one half the estimated growth rate.

Forecasting growth is incredibly difficult, and because of that difficulty there is a large amount of uncertainty in growth projections. Because of this, my second method utilized the S&P 500 Utilities index to provide a historical estimate of growth to ensure reasonableness. To measure the estimated growth rate, I calculated the 5-year Compound Annual Growth Rate of the S&P 500 Utilities Index. To measure the dividend yield, I used the yield measurement provided by Yahoo! Finance for the Utilities Select Sector SPDR Fund (XLU), an index fund designed to track the S&P 500 utilities index (Page 2, Exhibit NDE-2).

Q. What were the results of your DCF analyses?

A. The results of my two DCF analyses are on Page 2 of Exhibit NDE-1 and are also summarized below.

Results of DCF Calculation Using Proxy Group	9.34%
Results of DCF Calculation Using S&P Utilities	10.19%

Capital Asset Pricing Model

Q. What purpose does the CAPM serve in your analysis?

A. The CAPM serves as a check on reasonableness. The PUC has historically used the DCF method as the primary determinant of estimating cost of equity.[2]

Q. Please explain your calculation of return on equity using the CAPM and adjusted CAPM.

A. The Capital Asset Pricing Model describes the relationship between a security's investment risk and its market rate of return. Investors use this to identify the rate of return they should expect for a security of similar risk. The model uses the market risk premium, risk free rate, and the financial metric Beta (β) to calculate the return on an asset with respect to its risk. The formula for calculating the expected return on an asset given its risk is:

$$K = R_f + \beta(R_m - R_f)$$

K = Common Equity Cost Rate
R_f = Risk-free rate
$R_m - R_f$ = Market Risk Premium
β = Beta

I also employed an adjusted CAPM, sometimes referred to as an empirical CAPM (ECAPM). Historically, the theoretical risk return relationship in the CAPM has been incorrect in its predictive capability. For companies with a beta below 1, the estimated expected returns have been below the later observed returns, and for companies with a beta above 1 the estimated expected returns have been above the later observed returns.

[2] Final Opinion and Order. R-2010-2179103. Pp. 62-73.
Final Opinion and Order. R-2012-2290597. P. 80
Final Opinion and Order. R-2017-2640058 p. 119

In short, the CAPM framework underestimates the return on betas below 1 and overestimates the return on betas above 1. This is visualized in figure 1 below:

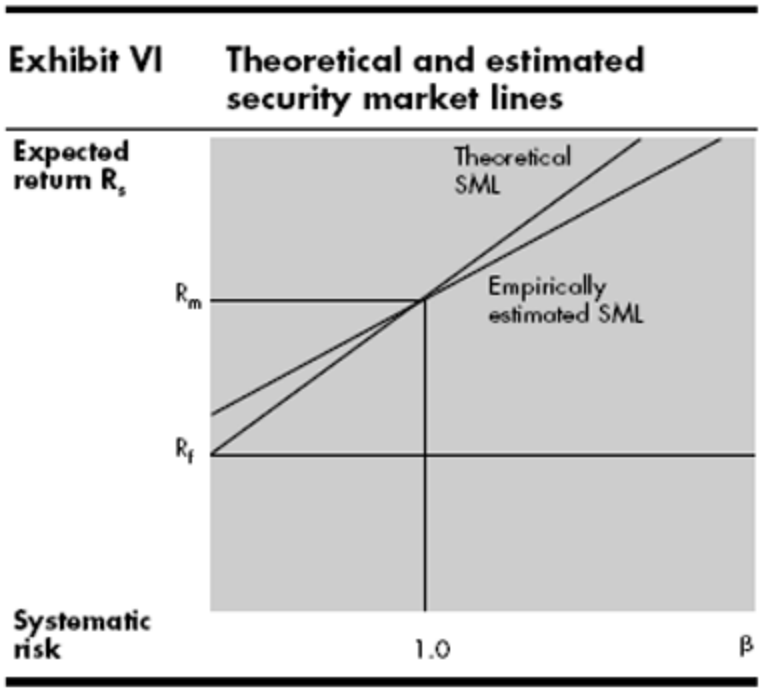

Figure 1[3]

To remedy this, an adjustment is made to the CAPM equation to weight the effect of the market more heavily on the estimated return on equity. This can be seen below in the equation for my ECAPM:

$$\underline{K = R_f + 0.25(R_m - R_f) + 0.75\big(\beta(R_m - R_f)\big)}$$

K = Common Equity Cost Rate
R_f = Risk-free rate
$R_m - R_f$ = Market Risk Premium
β = Beta

Q. What inputs did you use in your CAPM models?

[3] Mullins, David W. (1982). *Does the Capital Asset Pricing Model Work?* Harvard Business Review. January 1982.

A. To calculate the Risk-free rate, I used the 6-month average of yields on 30-year treasury securities. I used a 6-month average so as not to give too much weight to any particular day's rates, and I used 30-year treasury yields to represent the long-term nature of investment decisions.

Q. How did you calculate the Market Risk Premium?

A. To estimate the Market Premium, I used two methods which can be found in Exhibit NDE-3.

First, I calculated the historical market risk premium of the S&P 500 using the closing price of each year from 1928-2020. I used a geometric mean of the yearly returns of the S&P 500 to do this, with the resulting return being 9.79%. To calculate the risk-free rate of the historical CAPM I used 10-year treasury returns, the security with the longest term that was also tracked consistently during the same time period. I again calculated a geometric mean, leading to a 4.79% historical risk-free rate, and a resulting Market Risk Premium of 5.00%.[4]

To calculate my forward looking CAPM, I used analyst forecasts of the Market Risk Premium for the next 10 years. The analysts and firms utilized were Vanguard, Schwab, Seeking Alpha, JP Morgan and Duff & Phelps and their individual forecasts can be found on Page 2 of Exhibit NDE-3. These forecasts ranged from 4.1% per year for the next

[4] 9.79% - 4.79% = 5.00%

decade to 7.2% per year. The average of these forecasts was 5.68%, however, using my own judgement I chose to use 6.5% as the expected Market Risk Premium.

Q. Why did you utilize a geometric mean instead of an arithmetic mean?

A. The arithmetic mean does takes an average of all the yearly returns, but it does so with each year independent of the rest. This leads to an inaccurate depiction of the long-term return on an asset. An example of this can be explained through a simplified analysis of the following hypothetical:

> If an investor were to invest $100 in a stock, and the individual yearly returns of the following 5 years respectively were, 90%, 10%, 20%, 30%, and -90%, an investor would end year five with only $32.60 of their original investment. However, the arithmetic mean would lead an investor to the conclusion that the stock averaged a 12.00% year over year return.[5] A geometric mean would have been more accurate of reality showing a -20.08% year over year return[6]. Table 2 below holds a summary of this hypothetical.

[5] $12.00\% = \frac{90\%+10\%+20\%+30\%+(-90\%)}{5}$

[6] $-20.08\% = \left[(1+90\%)*(1+10\%)*(1+20\%)*(1+30\%)*\left(1+(-90\%)\right)\right]^{\frac{1}{5}} - 1$

Investment	$ 100.00
Yearly Return	Year End Value
90%	$ 190.00
10%	$ 209.00
20%	$ 250.80
30%	$ 326.04
-90%	$ 32.60
Arithmetic	12.00%
Geometric	-20.08%

Table 3

Q. How did you calculate Beta for use in your CAPM analysis?

A. In my measure of Beta, I used the daily prices of the past 6 months for the 7 companies in my proxy group and the S&P 500 utilities index. Beta works by taking the covariance of the returns on the stock and the market and dividing that by the variance of market. This provides a figure that attempts to represent that stock's volatility in relation to the market. After this I adjusted the betas using the Bloomberg Method, which assumes that over time Beta will regress toward the market average (1.0).[7] My breakdown of each proxy company's Beta is on Page 3 of exhibit NDE-3.

Q. What were the results of your CAPM and ECAPM analysis?

The results of my CAPM and ECAPM analysis are on page 1 of Exhibit NDE-3 and are also summarized below.

CAPM	7.18%
ECAPM	7.55%

[7] $\beta = 0.67(Raw_\beta) + 0.33(1)$

Final Return on Equity Recommendation

Q. Did you perform any other analyses to attempt to estimate the return on equity?

A. I did not perform any other analyses, however, I did collect the Quarterly Earnings Reports of the 6 largest water distribution companies (Pennsylvania American Water, Aqua America, Suez, York Water, Newtown Artesian, Columbia Water) in Pennsylvania to provide a check to my estimates for return on equity. The average return on equity in the past 5 years for these companies was 8.42%, and the summary of this information can be found on page 1 of Exhibit NDE-4.

Q. What is your final recommendation for the return on equity?

A. In setting my recommendation, as I explained above, the recommendation begins at the cost of common equity. While I do not support giving equal weight to the DCF and CAPM models, the range of results of all DCF and CAPM models was 7.18% - 10.19%, and the average of these results was 8.52%. However, in keeping with the tradition of recommending a specific equity return and maintaining the primary use of the DCF model in ROE estimation, my recommendation for the commission approved Return on Equity is the DCF rate of 9.34%. The DCF indicated for the proxy group was 9.34%. The indicated DCF for the S&P utilities was 10.19%. The CAPM results ranged between 7.18% - 7.55%. Using the CAPM results as a check supports using the lower of the DCF results, as does the 8.42% historic average return for the 6 largest Pennsylvania water utilities. I believe that a return on equity set at this rate provides a reasonable return to investors and is capable of attracting capital for future investment in the CUPA system. However, as is discussed by Ms. Sherwood in OCA Statement 1, the PUC should take

special consideration as to the effect of the COVID-19 pandemic on CUPA customers and adopt an ROE at the lowest reasonable level to minimize impact on ratepayers.

Results of DCF Calculation Using Proxy Group	9.34%
Results of DCF Calculation Using S&P Utilities	10.19%
Results of CAPM Calculation	7.18%
Results of Adjusted CAPM	7.55%
Realized ROE of PA Regulated Water Companies (as a check)	8.42%
Average of Models:	8.52%
Recommended ROE:	9.34%

<u>Comments on the Testimony of Mr. D'Ascendis</u>

Q. Do you have any comments on the testimony of Mr. D'Ascendis on behalf of Community Utilities of Pennsylvania?

A. Yes. I have comments regarding his recommended 1.00% size adjustment, his use of forecasted treasury yields, his use of arithmetic means to calculate year over year return, and his market models framework.

Q. Do you agree with Mr. D'Ascendis application of a size adjustment resulting in a 1.00% increase in recommended ROE?

A. No, I do not agree with the application of a size adjustment. It is important to understand that size is a diversifiable risk and investors are surely taking this into account when making decisions. Dr. Aswath Damodaran has studied equity risk premiums extensively, and in doing so has found that the "small cap premium" (size premium) exists only historically and is extremely volatile.[8] More importantly though, he has found that the premium's existence is generated almost entirely in January and is likely caused by some other factor beyond size.[9] Finally, Dr. Damodaran computes the size premium and compares it to the S&P 500 using raw data, finding that what measured as a 4.55% small cap premium was actually only 0.06% higher than the S&P 500. Over the very long term historically, the small cap premium existed, but today it is insignificant.[10]

Q. Why should yield projections not be used when attempting to estimate a proper ROE?

A. Projections of yield and interest rates for the past decade been inaccurate. The consensus among those involved in creating forecasts is most often an expected increase in rates and

[8] Aswath Damodaran, Equity Risk Premiums (ERP): Determinates, Estimation and Implications – The 2018 Edition (paper updated, March 2018) page 44.
[9] Ibid. p. 44
[10] Ibid. p. 105

yields, which is often wrong as they ignore the possibility of a decrease. The inaccuracy of these forecasts can be seen in figures 2 and 3 below.

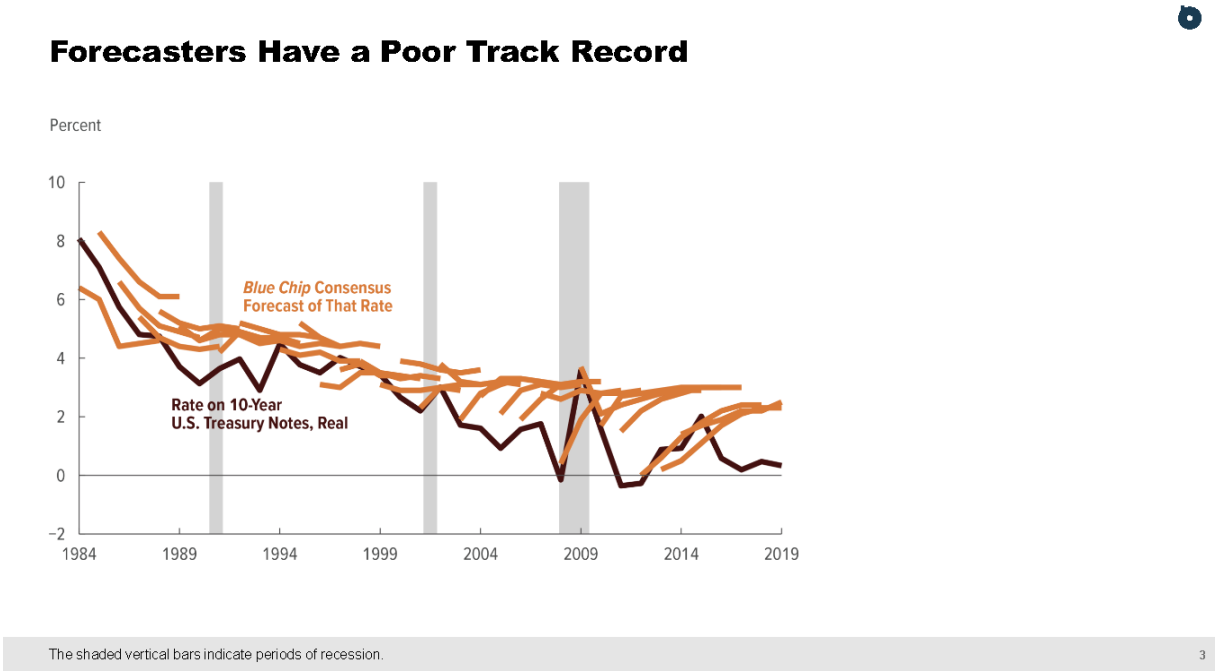

Figure 2 (Edward Gambler. Congressional Budget Office. The Historical Decline in Real Interest Rates and Its implications for CBO's Projections. 2021)

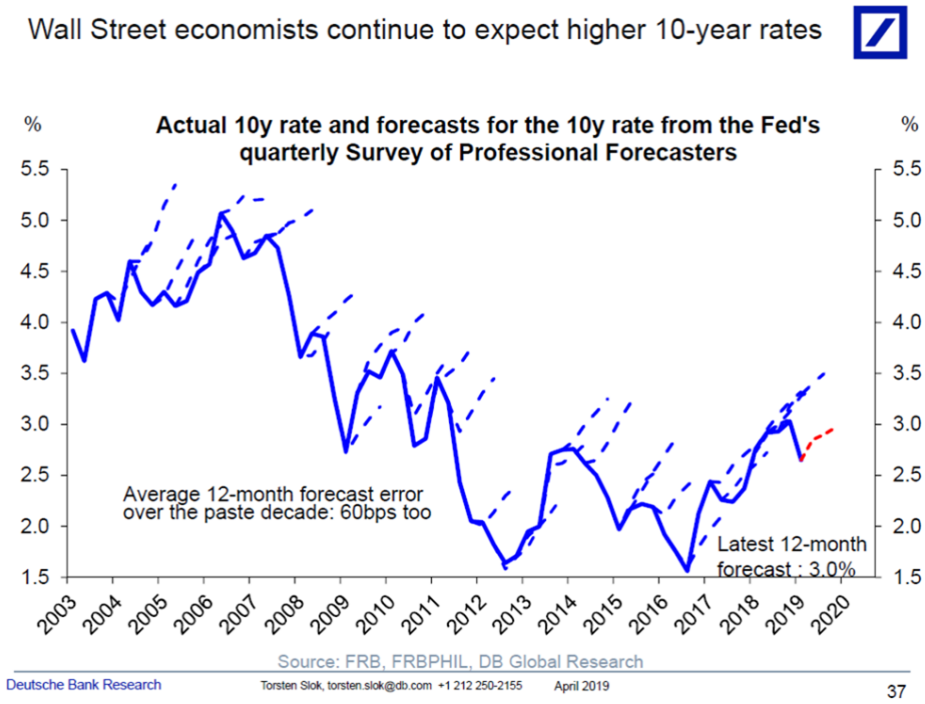

Figure 3 (Torsten Slok. Deutsche Bank. (2019))

Q. Does this mean yields will not increase?

A. No. All this means is that relying on the forecasts instead of current yields will likely lead to incorrect forecasts and miscalculated returns on equity. The best method is to use current yields on securities to calculate rates, as investors make their decisions using all available information.

Q. Does the use of projected yields distort Mr. D'Ascendis findings?

A. Yes, primarily his findings in his CAPM analyses and his Risk Premium model. The use of forecasted yields on treasury and corporate bonds is an ineffective method for calculating the risk-free rate.

Q. Does Mr. D'Ascendis use of an arithmetic mean distort his findings?

A. Yes, as I described above, the arithmetic mean overstates the historical year over year return because it looks at each individual years return independently. The geometric mean calculates the true year over year return on investment.

Q. What is your recommendation regarding Mr. D'Ascendis use of his market models framework?

A. I believe this model should not be considered in deciding the fair return on equity for CUPA.

Regarding the DCF estimation, while the residual standard errors and beta coefficients do indicate similar total investment risk, these are based on historical record, and these measures do not consider the difference in the possible futures of the industries of the individual companies. Yes, the historical data for this group indicates a similar investment profile, but the possible futures of these companies could not be more different. Among this group of non-price regulated companies is multiple retailers, pharmaceutical, biotech, and transportation companies. These companies face very different possible futures, and those possible futures are indicated in the analysts' projections of EPS growth.

Regarding the CAPM analysis and Risk Premium Model, the historical Market Risk Premium is based on arithmetic means, which overstate the year over year return for each individual asset. Along with that, in calculating the forward-looking risk premiums, the use of forecasted returns on treasury and corporate bonds is not reasonable for two reasons: One, as I described earlier, the best forecasts of rates and yields are almost always wrong. Two, even if we could forecast these rates, it leads to the assumption that the forecasters and analysts know more than the market.

The issue with the market models forecast is that it relies on too many uncertain projections. When that uncertainty is combined with the difference in industry between the companies in the non-price regulated proxy group and price regulated water, the return on equity is ultimately miscalculated.

Conclusion

Q. Please summarize your conclusions and recommendations.

A. I recommend an ROE of 9.34%. I believe that this level of return will attract capital, maintain investors, and keep rates reasonable for customers. In calculating the final rate of return for ratemaking purposes, my recommended rate of return is 7.10%. This is summarized in table 3 below.

	Percent	Cost Rate	Cost of Money
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Table 4

Also, I recommend that the Commission reject Mr. D'Ascendis' size adjustment.

Q. Does this complete your direct testimony?

A. Yes, it does. However, I reserve the right to modify or supplement my testimony if necessary.

APPENDIX A

QUALIFICATIONS OF

NOAH D. EASTMAN

Education

2019 B.S. Economics, Shippensburg University

Currently Pursuing: M.B.A. - Finance, Shippensburg University

Positions

Jan. 2020 – Present Regulatory Analyst, Pennsylvania Office of Consumer Advocate

Experience

I am currently employed by the Pennsylvania Office of Attorney General, Office of Consumer Advocate (OCA) as a Regulatory Analyst. My responsibilities include financial and economic analysis, rate of return determination, and other business operations analysis in the review of utility filings with the Pennsylvania Public Utility Commission. Additional responsibilities with the OCA include formulating recommendations for utility filings and preparing testimony.

Relevant Training

IPU Accounting and Ratemaking Course, April 2020

IPU Intermediate Course, August 2020

Previous Cases wherein testimony was submitted

McCloskey v. Hidden Valley Utility Service - C-2014-2447138, C-2014-2447169

Application of Pennsylvania American Water Company - A-2020-3019634

PaPUC v. Duquesne Light Company – R-2021-3024750

PaPUC v. PECO Energy Company – Electric Division – R-2021-3024601

Previous cases worked; no testimony submitted

PaPUC v. Reynolds Disposal Company - R-2020-3019612

Application of Pennsylvania American Water Company - A-2020-3021460

PaPUC v. Pike County Light and Power Company – R-2020-3022135, R-2020-3022134

Application of Aqua Pennsylvania Wastewater, Inc. - A-2021-3026132

Application of Aqua Pennsylvania Wastewater, Inc. – A-2021-3024267

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission v. Community Utilities of Pennsylvania, Inc.	Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

SCHEDULES ACCOMPANYING THE

DIRECT TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

August 13, 2021

Recommended Cost of Capital

	Percent	**Cost Rate**	**Cost of Money**
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Summary of Models

Results of DCF Calculation Using Proxy Group	9.34%
Results of DCF Calculation Using S&P Utilities	10.11%
Results of CAPM Calculation	7.18%
Results of Adjusted CAPM	7.55%
Realized ROE of PA Regulated Water Companies (as a check)	8.42%
Average of Models:	8.52%
Recommended ROE:	9.34%

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth in EPS (2)	Adjusted Dividend Yield (3)	Common Equity Cost Rate(4)
American States Water Company	1.69%	6.50%	N/A	5.20%	5.85%	1.74%	7.59%
American Water Works Company, Inc.	1.55%	8.50%	8.10%	8.60%	8.40%	1.61%	10.01%
California Water Service Group	1.60%	6.50%	N/A	11.70%	9.10%	1.67%	10.77%
Essential Utilities, Inc.	2.14%	10.00%	6.20%	6.40%	7.53%	2.22%	9.76%
Middlesex Water Company	1.32%	4.50%	N/A	2.70%	3.60%	1.34%	4.94%
SJW Group	2.10%	13.00%	N/A	7.00%	10.00%	2.21%	12.21%
York Water Company	1.51%	6.50%	N/A	4.90%	5.70%	1.55%	7.25%
						Average	8.93%
						Median	9.76%
Average of Mean and Median	9.34%						

N/A= Not Available

Notes:

(1) Most recent dividend divided by the 90 day average price ended June 30, 2021.

(2) Average of columns 2 through 4

(3) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment.

Thus, for American States Water Company, 1.69% x (1+(1/2 x 5.85%)) = 1.74%.

(4) Column 5 + Column 6.

Source of Information:

Value Line Investment Survey

www.zacks.com Downloaded on 06/30/2021

www.yahoo.com Downloaded on 06/30/2021

CAGR:	7.11%
Dividend Yields (1):	3.00%
DCF Using Historical S&P Utilities and Dividend Yield	10.11%

(1) Yahoo! Finance yield for Utilities Index (XLU)

	Date of Dividend	Dividend Amount	Yearly Dividend	Price (1)	Yield
AWR	14-May-21	$ 0.335	$ 1.34	$ 79.47	1.69%
AWK	10-May-21	$ 0.603	$ 2.41	$ 155.70	1.55%
WTRG	13-May-21	$ 0.251	$ 1.00	$ 46.88	2.14%
CWT	7-May-21	$ 0.230	$ 0.92	$ 57.66	1.60%
MSEX	13-May-21	$ 0.273	$ 1.09	$ 82.72	1.32%
SJW	7-May-21	$ 0.340	$ 1.36	$ 64.70	2.10%
YORW	29-Jun-21	$ 0.187	$ 0.75	$ 49.61	1.51%
				Average	1.70%

(1) Average price of 90 day period from March 31, 2021 through June 30, 2021 from Yahoo! Finance

CAPM	=	Rf	+	Beta	*	(Rm	-	Rf)
7.18%	=	2.18%	+	0.77	*	6.50%		
		(1)		(2)		(3)		

ECAPM		Rf				Risk Premium				Beta		Risk Premium
7.55%	=	2.18%	+	0.25	*	6.50%	+	0.75	*	0.77	*	6.50%
		(1)				(3)				(2)		(3)

(1) 6-Month Average Return on 30 year Treasury Rate
(2) Average adjusted beta, NDE-3 p. 3
(3) Forecasted Risk Premium w/ historical as a check

Aggregation of Forecasted Risk Premiums

	10 yr.		
Vanguard (1)	5.00%	Average	5.68%
Schwab (2)	6.60%	Estimate	6.50%
Seeking Alpha (3)	7.20%		
JP Morgan (4)	4.10%		
Duff & Phelps (5)	5.50%		

(1) https://pressroom.vanguard.com/nonindexed/Vanguard-economic-and-market-outlook-report-2021-120920.pdf

(2) https://www.schwab.com/resource-center/insights/content/why-market-returns-may-be-lower-in-the-future

(3) https://seekingalpha.com/article/4424107-risk-premia-forecasts-major-asset-classes-4-may-2021?utm_medium=email&utm_source=seeking_alpha

(4) https://am.jpmorgan.com/content/dam/jpm-am-aem/global/en/insights/portfolio-insights/ltcma/ltcma-full-report.pdf

(5) https://www.duffandphelps.com/-/media/assets/pdfs/publications/articles/dp-erp-rf-table-2020.pdf?la=en&hash=CEC22C0DD9928B72337F9B7E7536C753B0513063

	6 Month Beta	Adjustment (1)
AWR	0.57	0.71
AWK	0.66	0.77
CWT	0.55	0.70
MSEX	0.72	0.81
SJW	0.59	0.73
WTRG	0.69	0.79
YORW	0.81	0.87
	Average	0.77

(1) Adjustment to account for regression of Beta to 1.00

$$= 0.67 \times (\beta) + 0.33 \ (1)$$

S&P 500 Geometric Mean Returns 1928-2020	9.79%
10 Year Treasury Geometric Mean Returns 1928-2020	4.79%
Historical Market Risk Premium	5.00%

Water	31-Dec-20	31-Dec-19	31-Dec-18	31-Dec-17	31-Dec-16
AQUA	8.30%	8.24%		8.63%	10.57%
Columbia	3.70%	5.31%	8.57%		1.50%
Newtown	12.92%	3.28%		4.29%	8.77%
PAWC	8.15%	8.09%	9.03%	9.24%	8.51%
Suez	10.17%	12.15%		8.73%	9.90%
York	9.90%	9.80%	10.30%	8.40%	10.40%
Avg	8.86%	7.81%	9.30%	7.86%	8.28%
Average	8.42%				

Data compiled from Financial Reports filed with Pennsylvania Public Utility Commission

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Noah D. Eastman, hereby state that the facts set forth in my Direct Testimony, OCA Statement 2, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 13, 2021 Signature: _____
*313170 Noah D. Eastman

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

OCA STATEMENT 3

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket Nos. R-2021-3025206
	)	R-2021-3125207
Community Utilities of Pennsylvania, Inc.	)	

DIRECT TESTIMONY
OF
JEROME D. MIERZWA

ON BEHALF OF
THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 13, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I graduated from Canisius College in Buffalo, New York in 1981 with a Bachelor of Science Degree in Marketing. In 1985, I received a Master's Degree in Business Administration with a concentration in finance, also from Canisius College. In July 1986, I joined National Fuel Gas Distribution Corporation ("NFGD") as a Management Trainee in the Research and Statistical Services ("RSS") Department. I was promoted to Supervisor RSS in January 1987. While employed with NFGD, I conducted various financial and statistical analyses related to the company's market research activity and state regulatory affairs. In April 1987, as part of a corporate reorganization, I was transferred to National Fuel Gas Supply Corporation's ("NFG Supply's") rate department where my responsibilities included utility cost-of-service and rate design analysis, expense and revenue requirement forecasting, and activities related to federal regulation. I was also responsible for preparing NFG Supply's Federal Energy Regulatory Commission ("FERC") Purchased Gas Adjustment ("PGA") filings and developing interstate pipeline and spot market supply gas price projections. These forecasts were utilized for internal planning purposes as well as in NFGD's 1307(f) proceedings.

In April 1990, I accepted a position as a Utility Analyst with Exeter. In December 1992, I was promoted to Senior Regulatory Analyst. Effective April 1996, I became a Principal of Exeter. Since joining Exeter, I have specialized in evaluating the gas purchasing practices and policies of natural gas utilities, utility class cost-of-service and rate design analyses, sales and rate forecasting, performance-based incentive regulation, revenue requirement analysis, the unbundling of utility services, and the evaluation of customer choice natural gas transportation programs.

Q. HAVE YOU PREVIOUSLY TESTIFIED ON UTILITY RATES IN REGULATORY PROCEEDINGS?

A. Yes. I have provided testimony on nearly 400 occasions in proceedings before the FERC, utility regulatory commissions in Arkansas, Delaware, Georgia, Illinois, Indiana, Louisiana, Maine, Massachusetts, Montana, Nevada, New Hampshire, New Jersey, Ohio, Rhode Island, South Carolina, Texas, and Virginia, as well as before Pennsylvania Public Utility Commission ("PaPUC" or "the Commission").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. On April 12, 2021, Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") filed an application requesting to increase its rates for water service by $757,517, or 36.8 percent, and its rates for wastewater service by $998,705, or 37.9 percent. Exeter was retained by the Pennsylvania Office of Consumer Advocate ("OCA") to review the reasonableness of the requested increases, as well as the water and wastewater cost-of-service ("COS") studies and rate design proposals included in the Company's application. My testimony addresses the Company's COS studies and rate design proposals. My colleague, Ms. Stacy Sherwood, addresses the reasonableness of the Company's requested increases.

Q. PLEASE IDENTIFY THE SERVICE TERRITORIES SERVED BY CUPA AND THE SERVICES PROVIDED IN EACH TERRITORY.

A. CUPA has four service territories or divisions: Utilities, Inc. of Pennsylvania, Westgate, Penn Estates, and Tamiment. In the Utilities, Inc. of Pennsylvania service territory, CUPA provides wastewater service; water service is provided by Aqua Pennsylvania. CUPA provides water service in the Westgate service territory, but does not provide wastewater service. CUPA provides both water and wastewater services in the Penn Estates and Tamiment service territories.

Q. ARE THERE ADDITIONAL CONSIDERATIONS IN THIS PROCEEDING THAT ARE NOT OFTEN SEEN IN A TRADITIONAL BASE RATE CASE?

A. Yes. As explained in the Direct Testimony of Ms. Sherwood in OCA Statement 1, Pennsylvania and the rest of the world has faced significant hardships due to the COVID-19 Pandemic. The impact of the COVID-19 Pandemic continues to adversely affect Pennsylvania residents. The Commission should consider the impacts of the COVID-19 Pandemic when reaching its decision as to whether any increase should be authorized for CUPA in this proceeding. Authorizing a rate increase in this proceeding would further increase the hardships caused by the COVID-19 Pandemic. The economic effects of the COVID-19 Pandemic will not be fully known for some time, however, the Formal Complaints filed in this proceeding and the testimony provided at the Public Input Hearing indicates that many of CUPA's customers have been and continue to be impacted. The Commission should carefully consider and weigh these important consumer interests when evaluating the Company's claims for rate increases. Counsel for the OCA will further address CUPA's request for rate relief in its briefs.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A. I have reached the following conclusions:

- The Tamiment water service volumetric usage charge should be moved 70 percent toward the volumetric charge that would be applicable on a consolidated basis. Under this recommendation, when combined with my recommendation concerning customer charges, the average Tamiment Residential customer would experience a rate increase of 1.5 times the system average increase which is consistent with the concept of gradualism;

- All current water service monthly customer charges should be maintained;

- The Tamiment water service availability charge should be increased 1.5 times the system average increase;

- CUPA's proposed Low-Income Residential water service volumetric charge should be approved as a pilot program;

- CUPA's proposal to consolidate the wastewater rates of the Tamiment service territory and charge Tamiment customers a fixed flat rate should not be approved. CUPA should convert customers in its Utilities Inc. of Pennsylvania and Penn Estates service territories that are currently charged flat rates to a system of fixed and volumetric charges similar to the charges assessed to Tamiment customers. This conversion should occur in CUPA's next base rate case;

- The current Tamiment wastewater service volumetric charge should be increased so that the average Residential customer in the Tamiment service territory experiences the system average increase authorized by the Commission in this proceeding;

- For the consolidated Utilities, Inc. of Pennsylvania Penn Estates systems, the wastewater service flat and schools rates and availability charges should be proportionately scaled back to recover the increase authorized by the Commission in this proceeding not recovered through other wastewater rates and charges;

- The current Tamiment wastewater availability charge should be moved halfway toward the consolidated charge approved by the Commission in this proceeding; and

- CUPA should adopt a Low-Income Residential volumetric charge for its Tamiment Residential wastewater customers and a Low-Income Residential flat rate for wastewater customers in the Utilities, Inc. of Pennsylvania and Penn Estates service territories, as a pilot program.

These recommendations are based on cost of service and other generally accepted rate design principles and, at the same time, help to address the need to minimize the impact of any rate changes on customers.

Q. HOW DO YOUR RECOMMENDATIONS ADDRESS THE CONCERNS RAISED IN PUBLIC INPUT HEARING TESTIMONY AND CUSTOMERS' FORMAL COMPLAINTS?

A. To avoid rate shock for the Tamiment water system customers, I recommend moving their rates toward the rates for the consolidated system rather than making them equal to the rates for the other systems as CUPA proposed. Also, under my proposals for all of the systems, more of the increased revenue requirement will be recovered from volumetric charges instead of fixed charges, so that customers have greater ability to control their bills through conservation. For the same reason, I oppose CUPA's proposal to convert customers who currently have metered rates for wastewater service to flat rates and recommend that CUPA be required to propose metered rates for all of its wastewater customers (where usage data is available) in its next base rate case. Finally, I support CUPA's proposed discounted rate low-income residential water for water service and also recommend that CUPA provide the same type of discounted rate for wastewater service, to help make bills more affordable for those customers and mitigate the impact of the increase. I recommend that both be approved on a pilot basis so that the program can be evaluated and changed in the next base rate case as appropriate, after some experience.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. Including this introductory section, my testimony is divided into three sections. In the following section, I address CUPA's water COS study and rate design proposals. In the final section of my testimony I address CUPA's wastewater COS study and rate design proposals.

II. WATER COST ALLOCATION AND RATE DESIGN

Q. BRIEFLY DESCRIBE THE WATER COS STUDY PREPARED BY CUPA.

A. The water COS study prepared by CUPA utilizes the Base-Extra Capacity method. This is an industry standard which is described in the American Water Works Association's ("AWWA") Principles of Water Rates, Fees and Charges ("AWWA M1 Manual"). The COS study is sponsored by CUPA witness Scott A. Miller.

Q. DID YOUR REVIEW OF THE WATER COS STUDY REVEAL ANY CONCERNS?

A. No. I found the water COS study to be reasonable.

Q. PLEASE DESCRIBE CUPA'S WATER RATE DESIGN PROPOSALS IN THIS PROCEEDING.

A. As previously explained, CUPA provides water service in three service territories: Westgate, Penn Estates, and Tamiment. The rates for the Westgate and Penn Estates service territories are consolidated in that the same rates are currently applicable to customers in both service territories.[1] The rates for the Tamiment service territory differ from those of the consolidated rates applicable to customers in the Westgate and Penn Estates service territories. In this proceeding CUPA is proposing to consolidate

[1] Rate consolidation occurred over two rate cases following the 2015 merger of the systems into Community Utilities of Pennsylvania, Inc. Docket No. R-2016-2538660, Settlement ¶14(b) (Westgate and Penn Estates fixed customer charges for water service were set at the same rate); Docket Nos. R-2019-3008947, R-2019-3008948, Settlement ¶C.24-25 (both fixed and volumetric water and wastewater rates were unitized).

the Tamiment rates with the rates for Westgate and Penn Estates, which would result in the same rates for all three service territories. CUPA's current rates for water service consist of a fixed customer charge which varies based on meter size and a volumetric usage charge.[2] In addition to these rates, CUPA assesses a fixed availability charge to customers in the Penn Estates and Tamiment service territories that own lots without buildings where water service is available. CUPA Exhibit AWD-2, sponsored by CUPA witness Mr. Andrew W. Dickson, identifies CUPA's existing and proposed rates for water service. As indicated in the response to Office of Small Business Advocate interrogatory Set I, No. 2, to be consistent with Section 1328 of the Public Utility Code, CUPA will be revising its proposed rates in rebuttal testimony to limit the increase to public fire protection rates to 25 percent of the cost of service. Also, as indicated in CUPA Exhibit AWD-2 and discussed in the direct testimony of Mr. Dickson, the Company is proposing a Low-Income Residential volumetric usage charge.

Q. WHAT ARE SOME OF THE PRINCIPLES OF A SOUND RATE DESIGN?

A. A sound rate design should:

- Utilize class cost-of-service study results as a guide;
- Provide stability and predictability of the rates themselves, with a minimum of unexpected changes that are seriously adverse to ratepayers or the utility (gradualism);
- Yield the total revenue requirement; and
- Provide for simplicity, certainty, convenience of payment, understandability, public acceptability, and feasibility of application, and reflect fairness in the apportionment of the total cost of service among the various customer classes.[3]

[2] Westgate and Penn Estates customers are currently billed monthly and Tamiment customers are currently billed quarterly. CUPA is proposing to bill all customers on a monthly basis.

[3] Principles of Public Utility Rates, Second Edition, James C. Bonbright, Albert L. Danielsen, David R. Kamerschen; Public Utility Reports, Inc. 1988, pages 383-384.

Q. SHOULD CUPA'S PROPOSAL TO CONSOLIDATE THE WATER RATES OF THE TAMIMENT SERVICE TERRITORY BE ADOPTED?

A. No, not at this time. In this proceeding CUPA is proposing to increase water rates by an average of 36.8 percent across all three systems. Under CUPA's proposal to consolidate rates, an average Residential customer in the Tamiment service territory using approximately 3,000 gallons per month would experience a rate increase of 81 percent, or 2.2 times the system average increase. While there is no hard and fast rule with respect to applying the concept of gradualism, typically an increase of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. A rate increase of 81 percent is not consistent with the concept of gradualism. Therefore, at this time, I recommend that the Tamiment volumetric usage charges be moved 70 percent toward the volumetric usage charge that would have been applicable on a consolidated basis.

For example, based on its requested increase, CUPA is proposing a consolidated Residential volumetric usage charge of $11.946 per 1,000 gallons, and the current Tamiment Residential volumetric usage charge is $5.13 per 1,000 gallons. If the proposed consolidated Residential usage charge were adopted in this proceeding, moving the current Tamiment Residential usage charge to 70 percent of the consolidated charge would result in a charge of $9.901 per 1,000 gallons. All else being equal, for the average Tamiment Residential customer using 3,000 gallons per month, the increase would be 63 percent or 1.7 times the system average increase. When combined with my subsequently discussed recommendation to maintain all current customer charges, the average Tamiment Residential customer would experience a rate increase of approximately 1.5 times the system average increase which is consistent with the concept of gradualism. To be clear, this is calculated at the Company's

proposed revenue requirement. I discuss my recommendations for how rates should be scaled back in the event that the Commission awards CUPA an increase which is less than its requested increase below.

In addition, the current Tamiment availability charge is $20.90 per quarter, or $7.63 per month. CUPA is proposing a monthly Tamiment availability charge of $15.43 per month, or an increase of 100 percent. CUPA is proposing to decrease the availability charge in the consolidated service territories from $18.81 per month to $15.43 per month. To provide for gradualism, I recommend that the existing Tamiment availability charge be moved 55 percent toward the proposed charge, and the current consolidated availability charge be maintained. Based on CUPA's requested rate increase, my recommendation would increase the Tamiment availability charge to $11.92, or 56 percent. Consistent with my recommendation concerning Tamiment Residential water service charges, this would result in a 1.5 times system average increase in the Tamiment availability charge. Again, this increase is calculated assuming the Company receives its full revenue requirement request.

Q. SHOULD CUPA'S PROPOSED INCREASES IN THE CUSTOMER CHARGES BE APPROVED?

A. No. Cost based customer charges are presented on page 16 of CUPA Exhibit SAM-1 (Revised) which is sponsored by Mr. Miller. As shown there, the existing customer charges already exceed cost based charges. For example, for the Westgate and Penn Estates service territories, the current 5/8 inch meter charge is $17.25 per month and a cost based charge would be $14.80 per month. I would note that the current Tamiment charge of $54.55 shown on page 16 of Mr. Miller's exhibit is actually a quarterly charge. On a monthly basis, this is $18.18, which also exceeds cost based charges. I recommend that all current water service monthly charges be maintained and not

increased as proposed by CUPA. I agree with CUPA's proposal to convert the Tamiment customer charge from a quarterly to a monthly charge.

Q. HOW SHOULD RATES BE SCALED BACK IF CUPA IS AUTHORIZED A WATER RATE INCREASE WHICH IS LESS THAN ITS REQUESTED INCREASE?

A. In the event that CUPA is authorized an increase that is less than its requested increase, I recommend that CUPA's proposed volumetric usage and availability charges be proportionately scaled back before applying my rate design recommendations.

Q. SHOULD CUPA'S PROPOSED LOW-INCOME RESIDENTIAL VOLUMETRIC CHARGE BE APPROVED?

A. Yes. CUPA's proposed Low-Income Residential volumetric charge should be approved as a pilot program. In CUPA's next base rate proceeding, the Company should identify the number of customers participating in the program and the volumetric usage of those customers so that the OCA and other parties can evaluate the program and recommend appropriate changes.

III. WASTEWATER COST OF SERVICE AND RATE DESIGN

Q. BRIEFLY DESCRIBE THE WASTEWATER COS STUDY PREPARED BY CUPA.

A. The wastewater COS study prepared by CUPA is based on the U.S. Environmental Protection Agency's ("EPA") User Charge System. As explained by Mr. Miller who also sponsors this COS study, the User Charge System was originally developed and required by the EPA for wastewater projects receiving federal grant funding during the construction grants program of the 1980s.

Q. DID YOUR REVIEW OF THE WASTEWATER COS STUDY REVEAL ANY CONCERNS?

A. No. I found the wastewater COS study to be reasonable.

Q. PLEASE DESCRIBE CUPA'S WASTEWATER RATE DESIGN PROPOSALS IN THIS PROCEEDING.

A. All customers in the consolidated Utilities, Inc. of Pennsylvania and Penn Estates service territories, except schools and availability customers, are currently assessed the same fixed monthly rate for wastewater service. Schools are currently assessed a fixed per student charge and availability customers in the Penn Estates service territory are assessed a fixed monthly charge. Wastewater customers in the Tamiment service territory are currently assessed a fixed quarterly customer charge and a volumetric usage charge based on water usage. Availability customers in the Tamiment service territory are currently assessed a quarterly fixed charge. In this proceeding, CUPA is proposing to consolidate the rates for all three service territories and charge all customers, except schools and availability customers, a single monthly fixed charge. Schools would continue to be assessed a fixed per student charge and the same fixed charge would be applicable to all availability customers. CUPA WW Exhibit AWD-2, sponsored by CUPA witness Mr. Dickson, identifies CUPA's existing and proposed rates for wastewater service.

Q. DO YOU RECOMMEND ANY CHANGES TO THE PROPOSED RATE DESIGN FOR THE CUSTOMERS IN THE CONSOLIDATED UTILITIES, INC. OF PENNSYLVANIA AND PENN ESTATES SYSTEMS?

A. With the exception of adopting a Low-Income Residential wastewater rate for the consolidated systems as discussed later in my testimony, I am not proposing to change the rate design for the consolidated systems. I would note that the rate increase for the

consolidated systems will be lessened if the Commission adopts the OCA's recommendations for no increase or a lesser revenue requirement increase. Below, I further discuss how a scale back should be applied to rates.

Q. SHOULD CUPA'S PROPOSAL TO CONSOLIDATE THE WASTEWATER RATES OF THE TAMIMENT SERVICE TERRITORY BE ADOPTED?

A. No. As I noted, customers in the consolidated Utilities, Inc. of Pennsylvania and Penn Estates service territories are currently charged fixed (flat) rates. Customers in the Tamiment service territory should continue to be assessed a volumetric charge based on water usage. They should not be moved from volumetric to flat rates because that would be inconsistent with the Commission's policy of eliminating minimum allowances and moving utilities toward metered rates. There is no basis for the Company's proposal. Under flat rates customers are not billed for their actual use of CUPA's wastewater system and, therefore, flat rates are inconsistent with cost of service principles. For the Tamiment service territory, I recommend that the current fixed quarterly charges, converted to monthly charges, be maintained, and the current volumetric charge of $13.73 per 1,000 gallons be increased so that the average Residential customer in the Tamiment service territory using 3,000 gallons of water per month would experience the system average increase authorized for CUPA by the Commission in this proceeding. The rate increase proposed by CUPA for the average Residential customer in the Tamiment service territory is 19 percent. Under my rate design recommendation, based on CUPA's requested increase of 37.9 percent, the volumetric charge would increase from $13.73 to $18.93 per 1,000 gallons.

I recommend that CUPA convert customers in the Utilities, Inc. of Pennsylvania and Penn Estates service territories that are currently charged flat rates move to metered rates (made up of fixed and volumetric charges similar to the charges assessed to

Tamiment customers). Since water and wastewater flows are highly correlated, maintaining and extending volumetric charges will better promote cost-based rates for customers.[4] CUPA currently provides water service to wastewater customers in the Penn Estates service territory, so water usage data is currently available to for these customers. Customers in the Utilities Inc. of Pennsylvania service territory are currently provided water service by Aqua Pennsylvania. Therefore, CUPA should obtain water usage data for these customers from Aqua Pennsylvania, if usage data is available. I recommend that CUPA be required to propose metered rates (made up of fixed and volumetric charges) for Utilities Inc. of Pennsylvania and Penn Estates customers in its next base rate filing.

With respect to availability charges, the current Tamiment availability charge is $22.90 per quarter, or $7.63 per month. CUPA has proposed a $22.91 per month availability charge for the Tamiment service territory which is an increase of 200 percent. Based on CUPA's requested increase, my recommendation would be to increase the Tamiment service territory availability charge from $7.63 to $15.26 per month, or 100 percent. While an increase of 100 percent would be more than the 2.0 times the system average increase, in terms of total dollars, my recommended increase would be less than $2.00 per month per customer.

Q. HOW SHOULD RATES FOR CUSTOMERS IN ALL SYSTEMS BE SCALED BACK IF CUPA IS AUTHORIZED A WASTEWATER RATE INCREASE WHICH IS LESS THAN ITS REQUESTED INCREASE?

A. In the event that CUPA is authorized an increase that is less than its requested increase, the Tamiment volumetric charge should be adjusted so that the average Residential

[4] The Water Environment Federation's *Financing and Charges for Wastewater System* Manual of Practice No. 27 notes that "Because direct metering of wastewater volume is generally limited to large industrial or wholesale customers, it is common practice to use metered water data to estimate customer-contributed average wastewater volume units of service for the majority of customer classes," page 129.

customer in the Tamiment service territory would experience the system average increase authorized by the Commission. For the consolidated systems, I recommend a proportionate scale back of the flat and school rates and the availability charge to recover the increase authorized by the Commission in this proceeding not recovered through other rates and charges. With respect to the Tamiment availability charge, I recommend that the current Tamiment availability charge be moved halfway toward the consolidated scaled-back charge.

Q. YOU ADDRESSED CUPA'S PROPOSED LOW-INCOME RATE FOR RESIDENTIAL WATER CUSTOMERS ABOVE. DID CUPA PROPOSE A LOW-INCOME RATE FOR ITS RESIDENTIAL WASTEWATER CUSTOMERS?

A. No. In response to discovery, CUPA indicated that its reason for not proposing a low-income rate for wastewater customers (as it did for water customers) was based on consistency, customer understanding of their bills under new rates, and to consolidate the Tamiment service territory into CUPA's existing rate design.[5] As discussed above, I do not recommend consolidating rates in this proceeding or eliminating Tamiment's metered rates. The same reasons that support CUPA's proposal to mitigate water bills for its low-income Residential customers support mitigating their wastewater bills. I also note that CUPA's uncollectible rate is higher for its wastewater customers than its water customers.[6] As such, I recommend that CUPA establish a Low-Income Residential volumetric charge for the Tamiment Residential wastewater customers in this proceeding, calculated in the same manner as its proposed low-income rate for water customers after reflecting the scale back discussed above. For CUPA's low-income Residential wastewater customers in the other systems, who are not currently

[5] OCA Set IV-5.
[6] OCA Set IV-3.

charged volumetric rates, I recommend a proportionate reduction to their flat charges after reflecting the scale back discussed above. The volumetric (Tamiment) and flat rates (Utilities, Inc. of Pennsylvania and Penn Estates) for the other Residential wastewater customers should be increased proportionately to recover the revenue associated with the discount.

The Low-Income Residential wastewater rates should be approved in this proceeding as a pilot program. In CUPA's next base rate proceeding, the Company should identify the number of customers participating in the program and the volumetric usage of those customers in the Tamiment system, so that the OCA and other parties can evaluate the program and recommend appropriate changes.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts set forth in my Direct Testimony, OCA Statement 3, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 13, 2021
*315574

Signature: Jerome D. Mierzwa

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OCA Statement 4

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket Nos. R-2021-3025206 (water)
	:	R-2021-3025207 (wastewater)
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	:	

DIRECT TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 13, 2021

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, Pennsylvania, 17111.

Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a self-employed consulting engineer retained by the Office of Consumer Advocate (OCA) for the purposes of providing testimony in this proceeding.

Q. PLEASE DESCRIBE YOUR BACKGROUND AND QUALIFICATIONS.

A. Appendix A, which is attached to this testimony, describes my educational background and applicable experience.

Q. WHAT ISSUES HAVE YOU BEEN ASKED TO INVESTIGATE REGARDING THE COMMUNITY UTILITIES OF PENNSYLVANIA, INC. (CUPA OR COMPANY) RATE CASE?

A. The OCA requested that I investigate issues related to the quality of service provided by the Company.

Q. WHAT DID YOUR INVESTIGATION CONSIST OF?

My investigation included: (1) reviewing applicable portions of CUPA's Filing and the Direct Testimony of CUPA witnesses J. Bryce Mendenhall, Perry Brown, and David Clark; (2) reviewing customer complaints received by CUPA; (3) reviewing formal complaints filed by CUPA customers with the PUC; (4) reviewing CUPA's responses to the OCA's Interrogatories regarding quality of service issues; (5)

reviewing applicable DEP Permits and correspondence; (6) reviewing the Company's Annual Water Quality Reports for 2019 and 2020; (7) reviewing the transcript of the Public Input Hearing on June 29, 2021 and (8) inspecting some of the Company's water and wastewater facilities on August 5, 2021.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. I will address CUPA water service and wastewater service, in that order.

WATER SERVICE

Q. WHAT QUALITY OF SERVICE ISSUES ARE INCLUDED IN YOUR TESTIMONY?

A. Unaccounted for Water (UFW), Exercising Isolation Valves, Low and High Pressures, Customer Complaints about mold in Westgate, an outage in Penn Estates and the Company's communications with customers, and in both Penn Estates and Tamiment: water staining or damaging laundry, fixtures and appliances, being discolored or having an unpleasant taste or smell that causes customers not to cook or drink with it.

Q. BRIEFLY DESCRIBE THE COMPANY'S WATER FACILITIES.

A. The Company has three separate water systems – Penn Estates, Utilities Inc., Westgate (UIW or Westgate) and Tamiment.

Penn Estates System. The Penn Estates system serves a residential subdivision located in Monroe County, Pennsylvania. As of December 2020, there were

approximately 1,722 residential and seven commercial connections served by the water company[1]. Water is supplied by seven (7) deep wells that were drilled between 1976 and 2007. Raw water is pumped through seven (7) well houses by submersible well pumps and treated at each well house using sodium hypochlorite and SeaQuest before entering the distribution system[2]. During 2019 and 2020, the average daily water production of the Penn Estates system varied between 0.304 million gallons per day (mgd) and 0.325 mgd.[3]

The distribution system consists of approximately 158,400 feet of 6-inch and 8-inch PVC water mains along with six water storage tanks which hold a total of approximately 648,000 gallons.[4] Customer service connections are primarily copper, and all are metered with new Sensus automated meters. There are 202 hydrants[5] located within the water distribution system, along with 142 isolation valves.[6]

UIW System (Westgate). The water supply source for the UIW system is from the City of Bethlehem through two metered bulk water interconnections and a separate connection for Westgate customer Patient First. As of December 2020, there were approximately 962 residential and 23 commercial connections served by the water company[7]. The water distribution system consists of 15 miles of water main[6] ranging from four-inches to ten-inches in diameter. The piping is a mixture of ductile iron, some galvanized and PVC. Service connections are primarily copper and are metered with Sensus touch-read systems. There are 78 hydrants[8] and approximately 62 gate valves. Distribution storage is provided by the Bethlehem system.

[1] 2020 Chapter 110 Reports attached to CUPA's 2020 Annual Report to the PUC after p. 62 (2020 Ch. 110 Reports).
[2] OCA Set I-10.
[3] OCA Set I-7.
[4] OCA Set I-14.
[5] OCA Set I-12.
[6] 2020 DEP Water Allocation Permit Compliance Report
[7] 2020 Ch. 110 Reports.
[8] OCA Set I-12.

CUPA at Tamiment System (Tamiment). The Tamiment system serves a resort community located in Lehman Township, Pike County, Pennsylvania. As of December 2020, there were approximately 507 residential and four commercial connections served by the water company.[9] Water is supplied by three (3) wells. Well No. 1 and Well No. 2 are housed in separate buildings and have a separate feed to Tank No. 1 (125,000 gallon elevated tank). Well No. 1 water is treated with sodium hydroxide and sodium hypochlorite. Well No. 2 is not in use. Well No. 3 is also housed in a separate building, treated with sodium hydroxide and sodium hypochlorite and maintains the water level in Tank No. 3 (350,000 gallon tank). CUPA acquired this system on June 25, 2019 and on September 20, 2020 has been issued a DEP Construction Permit to construct a new treatment building for Well No. 1 and replace the existing facilities to treat Well No. 1 water. The proposed facilities will by-pass Tank No. 1 and connect directly into the distribution system. The existing Well No.1 and Well No. 2 buildings will be demolished.[10]

Unaccounted for Water

Q. WHAT IS MEANT BY THE TERM "UNACCOUNTED FOR WATER"?

A. There are several different procedures for calculating Unaccounted for Water. The PUC Method is shown on Section 500 of the PUC Annual Report Form for Public Water Utilities. According to the PUC procedure, UFW is equal to "Total Water Delivered for Distribution & Sale" minus "Total Sales" minus "Non-Revenue Usage and Allowance." "Non-Revenue Usage and Allowance" includes "Main Flushing," "Blow-off Use," "Unavoidable Leakage," "Located & Repaired Breaks in Mains & Services" and "Other".

[9] 2020 Ch. 110 Reports.
[10] PWS Construction Permit 5220511.

Q. WHY IS UFW IMPORTANT?

A. Calculating the amount of UFW is a method of estimating the amount of non-revenue water in a water distribution system due to leaks and inaccurate meter readings. Reducing the non-revenue water saves money in chemical and power costs and provides for important water conservation in areas that have limited water supply sources. The accuracy of the UFW estimate depends on reliable estimates of unavoidable non-metered water uses such as flushing the distribution system, firefighting, normal pipe leakage, repaired main breaks, etc. Keeping track of UFW gives a water utility an indication of the extent of unknown leaks in the distribution system so that informed decisions can be made on the necessity of finding and repairing leaks. The Water Audit methodology established by the International Water Association (IWA) and the American Water Works Association (AWWA) is generally becoming a more accepted method of identifying the amounts of wasted water – Non-Revenue Water (NRW). Both the PUC and AWWA Methods, if properly utilized, provide water utilities with information needed to improve operational efficiency. According to 52 Pa. Code § 65.20(4), "Levels of unaccounted-for water should be kept within reasonable amounts. Levels of UFW above 20% have been considered by the Commission to be excessive." The Commission has not set similar standards for levels of NRW.

Q. HAS CUPA PROVIDED INFORMATION ON HOW IT CALCULATES UFW?

A. Yes. In response to OCA-I-8, the Authority estimated the UFW for each of its three systems as:

Penn Estates: 2019 = 26.8% & 2020 = 17.69%

Westgate: 2019 = 13.4% & 2020 = 9.15%

Tamiment: 2020 = 56.01%

CUPA also submitted PUC Form 500 that estimates that all three systems have an UFW = 23.2 % for 2020 that would have been lower if the Company included an estimate for unavoidable leakage.

Copies of CUPA's UFW submittals are attached as Exhibit TLF-W1.

Q. DO YOU HAVE ANY COMMENTS ON THE UFW INFORMATION PROVIDED BY CUPA?

A. Yes. In future rate cases CUPA should submit an individual PUC Form 500 for each of its systems as other utilities that have multiple systems have agreed to do. This will be used for comparison with future submittals to determine progress in reducing UFW, especially in the Tamiment system.

<u>Isolation Valves</u>

Q. WHAT ARE ISOLATION VALVES?

A. Isolation valves are installed on water mains so that the water can be shut off in sections of the distribution system in case of a water main break or for main repairs and replacements. Isolation valves are also used to separate different pressure zones.

Q. WHY IS IT IMPORTANT TO EXERCISE ISOLATION VALVES?

A. It is important to exercise isolation valves to prevent the valves from seizing-up and getting stuck from corrosion or other deposits adjacent to the valve. An isolation valve that cannot be fully closed will increase the water loss during a water main break and increase the number of customers affected.

Q. WHAT HAPPENS IF AN ISOLATION VALVE BECOMES INOPERABLE DUE TO LACK OF BEING EXERCISED?

A. The valve either has to be repaired or replaced. Isolation valves are generally in pavement and that makes it very expensive to repair or replace. Even repairing the valve requires that the valve be exposed so that interior parts can be removed and replaced.

Q. WHAT DOES IT MEAN TO EXERCISE ISOLATION VALVES?

A. Exercising an isolation valve is operating the valve through complete full open/close cycles until it operates with little resistance. This requires some effort even for a well-maintained valve because the number of turns to fully open or close an isolation valve can vary from 12 turns for a 3-inch valve to 38 turns for a 12-inch valve.

Q. HOW OFTEN SHOULD AN ISOLATION VALVE BE EXERCISED?

A. According to The National Environmental Services Center at West Virginia University, experts recommend exercising the valves annually, if possible, or at least once every two years.[11]

According to AWWA, "Each valve should be operated through a full cycle and returned to its normal position on a schedule that is designed to prevent a buildup of tuberculation [rust formation in pipes as a result of corrosion] or other deposits that could render the valve inoperable or prevent a tight shutoff. The interval of time between operations of valves in critical locations or valves subjected to severe operating conditions should be shorter than for other less important installations but can be whatever time period is found to be satisfactory based on local experience."[12]

Q. WHAT INFORMATION DID CUPA PROVIDE REGARDING EXERCISING ISOLATION VALVES?

A. In response to OCA-I-24, CUPA indicates that it: (1) has a total of 578 isolation valves (in the Penn Estates and Westgate Systems); (2) is keeping records on exercising the isolation valves since the last rate case; (3) has exercised 495 different valves during the past three years; and (4) intends to locate and exercise the isolation valves in the Tamiment System during 2021. See Exhibit TLF-W2.

[11] Tech Brief, Valve Exercising, 2007, Vol. 7, Issue 2, The National Environmental Services Center of West Virginia University, Morgantown, WV

[12] American Water Works Association. 1996. Manual of Water Supply Practices, Denver: AWWA

Q. DID CUPA'S RESPONSE TO OCA-1-24 SPECIFICALLY STATE THAT ALL ATTEMPTS TO EXERCISE EACH ISOLATION VALVE WERE SUCESSFUL?

A. No. CUPA implied as such by not submitting a schedule for repair and replacement.

Q. WHAT SHOULD CUPA DO CONCERNING EXERCISING ISOLATION VALVES?

A. For each of its water systems, CUPA's records should include (1) the valve location, (2) date of attempt to exercise each valve; and (3) if the valve was broken or operable (successfully exercised). If the valve could not be properly exercised, the valve should be scheduled to be repaired or be replaced. As part of its next rate case filing, CUPA should furnish the OCA and other parties a report on the exercising records and schedule of any repair/replacements.

Pressure Surveys

Q. WHAT ARE THE PUC'S REQUIREMENTS FOR WATER PRESSURE?

A. As shown below, 52 Pa. Code § 65.6 requires normal operating pressures of not less than 25 psig[13] nor more than 125 psig at the water main.

§ 65.6. Pressures.

(a) *Variations in pressure.* The utility shall maintain normal operating pressures of not less than 25 p.s.i.g. nor more than 125 p.s.i.g. at the main, except that during periods of peak seasonal loads the pressures at the time of hourly maximum demand may be not less than 20 p.s.i.g. nor more than 150 p.s.i.g. and that during periods of hourly minimum demand the pressure may be not more than 150 p.s.i.g. A utility may undertake to furnish a service which does not comply with the foregoing specifications where compliance with such specifications would prevent it from furnishing adequate service to any customer or where called for by good

[13] "pounds per square inch gauge," or gage. PSIG units are relative to atmospheric pressure. The air surrounding Earth exerts pressure on all objects on the surface of the planet. At sea level, this pressure is 14.7 pounds for every square inch column of air.

engineering practices. The authority of the Commission to require service improvements incorporating standards other than those set forth in this subsection when, after investigation, it determines that such improvements are necessary is not hereby restricted.

(b) *Pressure gauges.* Within 2 years after the effective date of this section, each utility shall obtain one or more recording pressure gauges for each separately operated pressure zone for the purpose of making pressure surveys as required by this section. These gauges shall be able to record the pressure experienced on the zones and shall be able to record a continuous 24-hour test. Each utility serving 1,000 or more customers or 1,000 or more customers in any separately operated zone of a multi-zone utility shall maintain one or more of these recording pressure gauges in service at some representative point or points in each of the pressure zones of the utility.

(c) *Telemetering.* An utility may make the pressure surveys required by this section by means of telemetered information electronically transferred to printed copy instead of using recording pressure gauges.

(d) *Pressure surveys.* At regular intervals, but not less than once each year, each utility shall make a survey of pressures in its distribution system of sufficient magnitude to indicate the pressures maintained at representative points on its system. The surveys should be made at or near periods of maximum and minimum usage. Records of these surveys shall show the date and time of beginning and end of the test and the location at which the test was made. Records of these pressure surveys shall be maintained by the utility for a period of at least three years and shall be made available to representatives, agents, or employes of the Commission upon request.

Notes of Decisions

Adequate Pressure

The 25 p.s.i.g. minimum expressed in subsection (a) is not intended to restrict the authority of the PUC to order improvements where service is inadequate; therefore, the PUC has the power to order needed improvements notwithstanding that the pressure in a utility's main meets the standard of the regulation. *Barone v. Pennsylvania Public Utility Commission*, 485 A.2d 519 (Pa. Cmwlth. 1984).

Q. WHAT ARE THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (DEP) REQUIREMENTS FOR SYSTEM PRESSURES?

A. According to DEP's Public Water Supply Manual, Part II, Community System Design Standards:

1. Pressure

All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. The pipe system and its appurtenances shall be designed to maintain a minimum pressure of 20 pounds per square inch, gauge (psig) at ground level at all points in the distribution system under all conditions of flow. The

normal working pressure in the distribution system should be approximately 60 psig.[14]

Q. WHAT ARE THE DIFFERENCES BETWEEN THE PUC AND DEP PRESSURE REQUIREMENTS?

A. The PUC has a maximum and minimum pressure criterion while DEP has a minimum and normal working pressure criterion. The PUC has a minimum criterion of 25 psi at the main while DEP's minimum criteria is 20 psi at ground level. Assuming the main is buried 4.5 feet below ground, DEP minimum criteria is equivalent to 22 psi at the main.

Instead of having a pressure survey requirement for all water systems, DEP imposes a pressure survey requirement on specific systems with known pressure problems.

Q. WHAT ARE THE REPRESENTATIVE POINTS ON THE SYSTEM WHERE PRESSURE SURVEYS SHOULD BE CONDUCTED?

A. In general, the representative points are highest and lowest ground elevations of the distribution system in each pressure zone.

Q. DID CUPA PROVIDE PRESSURE SURVEY DATA ON ITS SYSTEMS?

A. Yes. In response to OCA-I-22, CUPA provided a list of pressures taken at each of its systems. See Exhibit TLF-W3. As can be noted from Exhibit TLF-W3, the

[14] Public Water Supply Manual, Part II, Community System Design Standards, May 6, 2006, p. 186-187.

following locations in the Penn Estates system are a concern because of low or high pressures:

Low Pressure: 5 to 10 psi at Hydrant 145; 5 to 15 psi at Hydrant 143; 20 psi to 40 psi at Hydrant 181.

High Pressure: 126 to 138 psi at Hydrant 81; 134 psi at Hydrant 124; 136 psi at Hydrant 125; 138 psi at Hydrant 123; 128 psi at Hydrant 71; 134 psi at Hydrant 51; 130 psi at Hydrant 70.

Q. HAS THE COMPANY COMPLETED ANY PROJECTS THAT HAVE INCREASED PRESSURES TO THE LOW PRESSURE AREAS?

A. Not that I am aware of.

Q. DO YOU HAVE ANY CONCERNS ABOUT THE PRESSURE SURVEY DATA SHOWING LOW PRESSURES?

A. Yes. Some of the reported pressures are extremely low and could indicate that nearby areas may be subject to negative pressures during periods of high demands, flushing, fires, etc. Negative pressures will allow contaminated ground water to enter the water mains at pipe joints and unrepaired leaks. Even very low pressures are a problem, because they impair customers' ability to use the water for daily needs, like cleaning.

Q. WHAT STEPS CAN BE TAKEN REGARDING LOW PRESSURES IN THE PENN ESTATES SYSTEM?

A. Yes. The Company should have its engineer make any recommendations that are necessary to comply with DEP's minimum pressure of 20 pounds per square inch,

gauge at ground level at all points in the distribution system under all conditions of flow. The engineer's recommendations should be submitted to the OCA and the parties within one-year.

Q. DO YOU HAVE ANY CONCERNS ABOUT THE PRESSURE SURVEY DATA SHOWING HIGH PRESSURES IN THE PENN ESTATES SYSTEM?

A. Yes. High pressures can cause damage to customer service lines and also the inside plumbing if the pressure reducing valve installed inside the building fails. Also, higher pressure results in larger volumes of unavoidable pipeline leakage and during pipeline and service line breaks.

Q. WHAT STEPS CAN BE TAKEN REGARDING HIGH PRESSURES?

A. Yes. CUPA should reduce normal operating pressures exceeding 125 psi in its mains. If it is impossible to reduce the main pressure, the Company should install a pressure reducing valve upstream of the customer's service line.

The Company should be responsible for all damages to customer facilities where the normal operating pressures exceed 125 psi unless it installs a pressure reducing valve approved for water supply with the applicable pressure upstream of the customer's service line.

<u>Customer Complaints Regarding the Water System</u>

Q. WHAT COMPLAINTS ARE YOU GOING TO ADDRESS?

A. The complaints listed in CUPA's Customer Complaint Logs for the years 2019, 2020 and 2021 (through May 24, 2021), Formal Complaints filed with the PUC, and testimony by witnesses at the Public Input Hearing, related to water service.

Q. WHAT ARE THE COMMISSION'S REGULATIONS REGARDING COMPLAINTS?

A. See 52 Pa. Code § 65.3. Complaints, shown below:

> (a) *Investigations.* A public utility shall make a full and prompt investigation of complaints made by the Commission or by others, including customers, relating to service or facilities.
> (b) *Records of complaints.* A public utility shall preserve for a period of at least 5 years, written service complaints showing the name and address of the complainant, the date and character of the complaint and the final disposition of the complaint.
>
> **Authority**
>
> The provisions of this § 65.3 issued under the Public Utility Code, 66 Pa. C.S. § § 317, 501, 504, 506, 1301, 1304, 1501, 1502, 1503, 1504, 1507, 1508, 1701, 1702 and 1704.
>
> **Source**
>
> The provisions of this § 65.3 adopted March 25, 1946; amended August 15, 1980, effective August 16, 1980, 10 Pa.B. 3356. Immediately preceding text appears at serial page (21014).

Q. WHAT DOES YOUR REVIEW OF THE COMPANY'S CUSTOMER COMPLAINT LOGS CONSIST OF?

A. The Company submitted a customer complaint/call log for each water and wastewater system on a live Excel spreadsheet which I sorted in a manner to determine if there were several complaints regarding the same issue that occurred around the same place and time.

Penn Estates Water System

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS PENN ESTATES SYSTEM?

A. Yes. See Exhibit TLF-W4 for a summary of the Complaint Log for the Penn Estates Water System.[15]

Q. DID YOU NOTICE SOME COMPLAINTS IN THAT LOG THAT THE COMPANY SHOULD ADDRESS?

A. Yes. There are three categories of complaints that the Company should address: (1) discolored water due to wells pumping air[16]; (2) water trucked/delivered to distribution storage tanks; and (3) customers' complaints of illness caused by the water.

Q. WHY SHOULD THE COMPANY PROVIDE MORE INFORMATION ON DISCOLORED WATER DUE TO WELLS PUMPING AIR?

A. The Company responded to 24 discolored water complaints by indicating that one or more wells were drawing air into the distribution system. These complaints occurred over a year and are an indication that the system may not have sufficient reliable sources of supply and at least one of its wells could not supply sufficient water. The dates of the complaints are shown below.

- 10/01/2019 thru 10/20/2019 – 4 complaints (Well #4).
- 06/25/2020 thru 10/27/2020 – 7 complaints (Well #4).

[15] OCA Set I-19 (Water)(confidential). I note that this response was marked confidential to protect customers' identifying information. My testimony and exhibits based on this response only present aggregate, non-customer specific information and are not confidential.

[16] During the pumping cycle, air is pumped into the distribution system due to the water table being too low.

- 02/18/2020 – 1 complaint (unnamed well).
- 11/19/2020 thru 11/05/2020 – 9 complaints (unnamed well).

Q. SHOULD ANY SPECIFIC INFORMATION BE INCLUDED IN THE COMPANY'S RESPONSE?

A. The Company should have its engineer: (1) explain why this is not an indication of insufficient sources of supply; (2) explain why the well pump has not been lowered; or (3) submit a time schedule for increasing the Company's source of supply by either drilling a new well or providing manganese treatment at Well #8 so that well can be used. This explanation or time schedule should be provided as part of CUPA's testimony in this proceeding.

Q. ARE THERE ANY OTHER INDICATIONS THAT THE COMPANY DOES NOT HAVE SUFFICIENT RELIABLE SOURCES OF SUPPLY?

A. Yes. First, one of the Company's wells (Well #8) has been taken off-line because of high manganese levels.[17] See Exhibit TLF-W5. According to the Company, the fate of Well #8 will be determined after an engineer pursues drilling a new well. Second, the Company declared a BWA between August 3 -13, 2020 because of water line breaks, elevated usage and empty storage tanks. See Exhibit TLF-W6. The Complaint Log contained nine customer complaints regarding dirty water that the Company noted as being due to water being trucked/delivered to Company's distribution storage tanks by tankers on July 27-28, 2020, and August 6, 2020. Testimony at the PIH indicated that dozens of tankers delivered water to at least

[17] CUPA response to OCA-I-32. According to the 2020 Chapter 110 Reports, 36,713 gallons was withdrawn from Well #8 during 2020.

one of the Company's storage tanks both before and during the Boil Water Advisory (BWA)[18].

Q. IS THERE ANY THING ELSE THE COMPANY SHOULD EXPLAIN ABOUT TRUCKING/DELIVERING WATER TO ITS DISTRIBUTION TANKS?

A. Yes. The Company should explain why it did not have to issue a BWA prior to August 3, 2020, when it was having water delivered to its tanks.

Q. HOW MANY COMPLAINTS DID THE COMPANY RECEIVE ABOUT THE WATER CAUSING CUSTOMERS TO BECOME SICK?

A. Between May 1, 2019 and May 17, 2019, the Company received 3 complaints (2 from the same address) that the water caused an illness.

Q. WHAT ADDITIONAL INFORMATION SHOULD THE COMPANY PROVIDE ABOUT THE ILLNESS COMPLAINTS?

A. The Company should provide information about the final disposition of each complaint in its testimony in this proceeding (under confidential cover, if appropriate).

Westgate Water System

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS WESTGATE WATER SYSTEM?

[18] Tr. 135-137.

A. Yes. See Exhibit TLF-W7 for a summary of the Complaint Log for the Westgate Water System.

Q. DID YOU NOTICE SOME COMPLAINTS IN THAT LOG THAT THE COMPANY SHOULD ADDRESS?

A. Yes. The Company should explain why there were 14 complaints about mold, specifically black mold and staining between 09/24/2019 thru 11/15/2019, 2 similar complaints between 09/15/2020 thru 11/03/2020, and none so far in 2021. It should be noted that all of the water supplied to Westgate is treated by the City of Bethlehem.

Tamiment Water System

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS TAMINMENT WATER SYSTEM?

A. Yes. See Exhibit TLF-W8 for a summary of the Complaint Log for the Tamiment Water System.

Q. WAS THERE ANYTHING IN THE COMPANY'S TAMIMENT COMPLAINT LOG THAT SHOULD BE ADDRESSED FURTHER?

A. No.

Formal Complaints regarding Quality of Service

Q. PLEASE DISCUSS THE FORMAL COMPLAINTS MADE BY THE COMPANY'S CUSTOMERS REGARDING THE TAMIMENT SYSTEM?

A. The following seven Formal Complaints were filed by customers of the Company's Tamiment Water System:

- David F. (Ravenhill Road), complained that the Company violated Pennsylvania law for water quality standards and monitoring per the 2019 and 2020 Annual Water Quality Reports.
- Louis R. (Old Took Drive), complained that the quality of the water is so horrible that they won't consume it and has to have water delivered to his home.
- William and Dahlia M. (Chico Lane), complained of poor quality water, low pressure, and damage to numerous appliances due to hard water.
- Jean S. (Carrock Way), complained of low pressure and does not drink the water because it has a metallic taste.
- Amos and Kathleen L. (Tom Noddys Drive), complained that the water pressure is very low and at times has a peculiar odor.
- Roger F. (Galion Drive), complained that the water has a metallic taste and he purchases other water to drink and cook with.
- Marcia M. (Clicko Lane), complained that the water is consistently brown and the pressure is low.

Q. IN RESPONSE TO THE CUSTOMER ON RAVENHILL ROAD, HAS CUPA VIOLATED ANY DRINKING WATER STANDARDS OR MONITORING REQUIREMENTS?

A. Yes. In response to OCA-I-3, the Company listed 16 violations of DEP primary and secondary drinking water standards in 2019 and 2020. Four of those violations were in the Tamiment system for failure to monitor, report or properly collect samples. Roughly 11 violations were in the Penn Estates system, for not issuing public notifications and failure to monitor, report or properly collect

samples. One of those was for failure to issue a Tier 1 public notification.[19] Two violations were in the Westgate system, for failure to monitor/report. See Exhibit TLF-W9.

Q. DO YOU HAVE ANY COMMENTS ON THE QUALITY OF SERVICE ISSUES RAISED IN THE OTHER FORMAL COMPLAINANTS BY CUSTOMERS IN THE TAMIMENT SYSTEM?

A. Yes. As I discuss below, other Tamiment customers raised similar concerns during the Public Input Hearing (PIH). I will provide my comments as part of that discussion.

PIH Customer Complaints regarding Quality of Service

Q. DID ANY CUSTOMERS RAISE QUALITY OF SERVICE ISSUES AT THE PUBLIC INPUT HEARING HELD ON JUNE 29, 2021?

A. Yes. Thirty-nine customers and three state representatives testified at the public input hearing. Based on my review of the transcript, the following customers testified about water-specific quality of service issues:

Westgate Water System

- Jeffrey V., Bel Air Road, testified that the Company provides reactionary maintenance instead of preventative maintenance; doesn't maintain the grounds around the storage tank; doesn't open and close valves; repaired a weekend main break on the following Monday; repaired its own driveway prior to a customer's driveway and hasn't touched a shut off valve on his lawn. Tr. 67-70.

[19] DEP Public notice requirements "are divided into three tiers, to take into account the seriousness of the violation or situation and any potential adverse health effects that may be involved. . . Tier 1 public notice. Required for violations and situations specified in subsection (a) with significant potential to have serious adverse effects on human health as a result of short-term exposure." 25 Pa. Code § 109.407.

Penn Estates Water System

- Debra K., Mayfield Court, testified that in 2019 they had a breach on June 28th that contaminated the water for about three or four hours and did not notify customers until about July 17th. During that period, she ingested contaminated water or food and developed an autoimmune disease. She no longer drinks or cooks with the tap water. She also testified about the water staining her tub and the ten day contamination period in 2020 where they had no drinking water. Tr.103-104. She ruined a good soup pot boiling water because it had a ring around it. Tr. 106.
- Michelle G., Highland Drive, testified that because of letters from the Company, they purchase other water to prevent being sick and during 2020 she could not wash her baby's bottle in the water. She testified that the water made everybody sick. Also, the water has too much sulfur and makes them very, very itchy. She has auto immune disease. They have purchased filtration systems for every shower in the house and sink. Tr. 107-111.
- George F., Summerton Circle, testified that he is on this third water heater because the water is so full of sediment. He also testified that during the summer of 2020, he watched dozens of water tankers deliver water to the water tower near his home; then after a day or two received an automated BWA; and then later was told not to drink the water. He testified that the Company did not return his call regarding the quality of the water being trucked in. They no longer drink the water. Tr. 135-137.
- David M., Spicebush Drive, testified that the Company does not notify customers of planned outages, boil advisories, and water quality concerns until after the fact. He also testified that he doesn't recall the hydrant at the bottom of his driveway being flushed during the last 10 years that he worked out of his home and the Company can't locate water leaks. Tr. 141-142.
- Robin N., Overlook, testified that the water has a lot of sediment and has broken two water heaters in four years in addition to the one when she moved in. She also testified that the water discolors white clothes and stains light colored objects. Because of brown water coming out of her faucets, the Company tried running all her faucets without success. The next day they flushed the hydrant across the street that sometimes offers a temporary improvement. She clarified her testimony by stating that the water is a problem a few times a year. Tr. 186-192.

Tamiment System

- Janine M., no address, testified about the lack of maintenance by the Company of a tank several years ago and a ring around the toilets and bathtub. Tr. 48, 50.
- Javier P., Old Took Drive, testified that the Company doesn't notify customers if they have a leak inside the house. Tr. 65.
- Maryann B., Hunters Woods Drive, testified that she when she bought her house, she spent three days trying to get her water turned on. Also, the Company charges a service fee for those paying by phone or the website. Tr. 74-75.
- Amila H., Oakenshield Drive, testified that the water is not suitable for washing her hair, taking a shower, and washing white laundry. Tr. 114-115.
- Catherine G., Swartsboro Drive, testified that she won't even use the water boiled to cook with because of sediment and a ring around the toilet. They buy a lot of bottled water, about 4 cases of 24 bottles each per week. They also buy water in larger containers for their cooler to cook with – about four bottles last a week and a half . Tr. 120-123.
- Paul K., Brandyshire Drive, testified about information contained in the Company's Annual Water Quality Report for 2020 concerning violations of improper reporting, monitoring and testing the water. He also testified that he uses bottled water, has noticed a color residue in a toilet and a slight chlorine smell. Tr. 149-153.
- Mark J., Woodyend Loop, testified that he does not have the water quality problems others have expressed because he invested in a water softener system which he spent a large amount of money on. Tr. 161.

- Greg S., Underhill Drive, testified that they drink bottled water because of the notices received about the water quality. He also testified that the water smells like chlorine. Tr. 167.
- Christopher D., Long Lake Road, testified that in the five years since buying the house, he has been through two water heaters and two grinder pumps. The elements in one of the water heaters was eaten up within six months. He testified that sulfur and chlorine works like a corrosive. Tr. 169-170.
- Michael S., Galion Drive, testified that he had to replace his hot water heater, buys extra water because he does not consume the water due to its odor, and the continued notices they receive about the Company's violations and contaminations. He testified about damaged appliances, and they all have noted skin problems that they attribute towards the water. Tr. 178-179.
- Oleg C., Brandyshire Drive, testified that he had to replace his grinder pump, that his plumbing and HVAC contractors told him about a lot of corrosion on the pipes and in the water heater, possibly due to water quality, sediment and pressure. He also testified about receiving a high bill, calling the Company who asked about a possibility of a pool, hot tub, jacuzzi, slip and slides, or leak. His property is a vacation home that he does rent out. Tr. 198-204.
- Jessica C., Bombur Lane, testified that she is on her third hot water heater in nine years, has very low water pressure, issues with all of the pipes corroding, and has replaced all the shut-off valves in the house. She also testified about replacing at least a dozen metal piece that connects to the flap at the toilet and repairing a washer that had a sensor corroded. Tr. 209-211.
- Ronald F., Condor Drive, testified that he has toilets full of brown residue every time he occasionally goes there. Tr. 222.
- Joseph B., Underhill Drive, Tamiment Water System, testified that they had to replace their grinder pump, use bottled water and have a ring around the toilet. Tr. 232.
- Jennifer R., Old Took Drive, testified that she is constantly cleaning due to water sediment around the faucet rings and stuff, can't wash white laundry, and has 5 gallon jugs of water delivered. She also testified that she has a DTS (total dissolved solids) reader and it read over 600 both at her present house and previously when living in a rental property on the same system down a year ago. She only uses the Company's water for bathing and cleaning dishes. They usually get seven 5-gallon jugs of water per month. Tr. 235-237.

Q. WHAT SHOULD CUPA DO CONCERNING THE CUSTOMER COMPLAINTS RAISED AT THE PIH AND IN FORMAL COMPLAINTS?

A. Customers raised issues about the quality of water they receive from the Company. The Company must ensure that it provides drinking water to customers that is suitable for household purposes, including drinking, cleaning, and cooking. The Company needs to provide additional information about the issues raised by these customers, explain what may have caused the issues, and how it intends to address the complaints.

Q. ARE THERE SPECIFIC ISSUES CONCERNING CUSTOMERS' COMPLAINTS THAT THE COMPANY SHOULD ADDRESS IN ITS TESTIMONY IN THIS PROCEEDING?

A. Yes. The Company should address the following issues:

Westgate. (1) The black mold and staining problems.

Penn Estates. (1) Low pressures below DEP's 20 psi minimum; (2) Well(s) pumping air into the distribution system over a long period of time; (3) whether the system has adequate and reliable sources of supply; (4) the cause (main breaks, empty storage tanks) of the BWA during August 2020, including the suitability of the water delivered and the tankers delivering drinking water; and (5) the subject of the DEP violation in 2019 regarding the Tier 1 notification.

The Company should provide recent laboratory tests for hardness, total dissolved solids (TDS) and sulfates[20] for each of its wells. Higher levels can cause many of the problems identified by the Penn Estates customers at the PIH and in formal complaints, such as rings and residue on fixtures, stained laundry, unpleasant taste and smell causing customers not to drink or cook with it. When water is hot, it is more corrosive. So higher levels of hardness or TDS may also explain some of the complaints about hot water tanks having a shorter service life.

[20] Hardness is not a regulated Safe Drinking Water contaminant but is a primary cause of problems with hot water heaters, appliances using hot water and cooking pots and pans. If TDS levels require treatment, however, that treatment would also significantly reduce hardness. At higher levels, TDS and sulfates can negatively affect taste, odor and appearance of water.

Tamiment. The Company should provide recent laboratory tests for total dissolved solids (TDS), sulfate and hardness[21] for each of its two wells for the same reasons discussed above for Penn Estates.

Q. SHOULD CUPA TAKE ANY OTHER ACTION?

A. Yes. CUPA should be providing timely notice to customers regarding the need to boil water or not consume, both when the requirement is instituted and when it is lifted. The Company should submit reports showing the date and time that CUPA identifies the need for an advisory, the timing and method of the related notice to customers, the date and time that CUPA determines to lift the advisory, and the timing and method of the related notice to customers. The reports should be provided to the OCA and parties every six months until CUPA files its next base rate case.

WASTEWATER SERVICE

Q. WHAT QUALITY OF SERVICE ISSUES ARE INCLUDED IN YOUR TESTIMONY?

A. I address my review of the Customer Complaint Log, Formal Complaints filed with the PUC and the transcript from the Public Input Hearing, and discuss the concerns raised by customers about Grinder Pumps.

Q. BRIEFLY DESCRIBE THE COMPANY'S WASTEWATER FACILITIES.

[21] Ibid.

A. The Company has three separate wastewater systems – Broad Run, Penn Estates and Utilities Inc., Tamiment.

Broad Run Wastewater System (Broad Run). The Broad Run wastewater system serves several residential subdivisions located just south of Downingtown in Chester County, Pennsylvania.[22]
The collection and conveyance systems consist of 103,746 feet of gravity sewer (8, 10, 15 & 18-inch), three pumping stations, 5,280 feet of force main, 505 manholes serving 1,567 residential and four commercial customer connections. The wastewater treatment plant has a permitted capacity of 0.40 million gallons per day (MGD) and consists of a fine screen, two equalization tanks, three aeration/clarifier tanks, a chlorine contact/post-aeration tank prior to discharge to the East Branch of Brandywine Creek.[23]

Penn Estates Wastewater System. The Penn Estates wastewater system serves a residential subdivision located in Monroe County, Pennsylvania. As of December 2020, there were approximately 1,722 residential and seven commercial connections served by the Company.[24]
The collection systems consist of 151,200 feet of 8, 10, and 15-inch gravity mains, 590 manholes and 1,729 customer connections. The conveyance consists of three lift stations, 4,313 feet of 4-inch force main and 2,131 feet force main from customer pumps. The wastewater treatment plant has a permitted capacity of 0.56 million gallons per day (MGD) and consists of five equalization tanks, an aeration tank, two clarifiers, four rapid sand/denitrification filters, a chlorine contact tank, and a post/air de-chlorination tank prior to discharge to an unnamed tributary of Broadhead Creek.[25]

[22] Location of address per Microsoft Maps.
[23] 2020 PUC Annual Report, Attachments after p. 63.
[24] DEP Chapter 110 Reports for Penn Estates for the Calendar Year 2020.
[25] 2020 PUC Annual Report, Attachments after p. 63.

Tamiment Wastewater System (Tamiment). The Tamiment system serves a resort community located in Lehman Township, Pike County, Pennsylvania. As of December 2020, there were approximately 507 residential and four commercial connections served by the wastewater company[26].

The collection and conveyance systems consist of 10,000 feet of 4 and 8-inch gravity mains, 50,000 feet of 2, 4 and 6-inch low pressure main, 40 manholes and three lift stations serving 511 customer connections. The wastewater treatment plant has a permitted capacity of 0.25 million gallons per day (MGD) and consists of two equalization tanks, five aeration tanks, five clarifiers, rapid mix tank, slow mix flocculation chamber, tray settler, sand filter and a chlorine contact tank. The WWTP has two discharge points. A submersible pump station conveys effluent to below First Pond for discharge to an unnamed tributary of Little Bushkill Creek. A second pumping station discharges to the First Pond from where it is discharged to a spray irrigation lagoon.[27]

Q. WHAT IS A LOW PRESSURE SEWER SYSTEM?

A. A low pressure sewer system consists of grinder pumps, basins, piping, valves and controls that grind and pump residential and municipal wastewater through small diameter pipe following the contour of ground at a depth below frost levels to a wastewater treatment plant, pump station or gravity sewer line. See Exhibit TLF-WW1 for a publication by the City of Augusta, Georgia regarding the purpose and use of grinder pumps.[28] The example is for a grinder pump discharging to a gravity sewer but it is also applicable to discharging to a low pressure sewer system.

Q. WHO OWNS THE GRINDER PUMPS?

[26] DEP Chapter 110 Reports for Tamiment Resort for the Calendar Year 2020.
[27] 2020 PUC Annual Report, Attachments after p. 63.
[28] https://www.augustaga.gov/DocumentCenter/View/6505/Grinder-Pump-FAQ?bidId

A. Typically, the customers own the grinder pumps, which are needed to pump their sewage into a low pressure sewer or a gravity sewer that is at higher in elevation than the house plumbing.

Q. HAS THE COMPANY RECEIVED ANY NOTICE OF VIOLATIONS (NOV) FROM THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION?

A. Yes. The Company received two NOVs concerning the Penn Estates System. The first was dated April 10, 2019 from DEP in regard to 16 monthly effluent violations that occurred between August 2014 and December 2018. The second one was dated September 11, 2019 in regard to an additional effluent violation during June 2019 and seven Sanitary Sewer Overflows (SSO) that occurred between March 22, 2019 and May 20, 2019.

Q. DID DEP TAKE FURTHER ACTION REGARDING THE PENN ESTATES NOVs?

A. Yes. DEP and the Company entered into a Consent Order and Agreement (CO&A) dated October 22, 2020.[29] See Exhibit TLF-WW2.

Q. WHAT CORRECTIVE ACTIONS DID THE COMPANY AGREE TO TAKE IN ACCORDANCE WITH THE CO&A?

A. The Company agreed to do the following:[30]

a. Penn Estates will install and render operational a new facility generator of sufficient capacity and an automated transfer switch capable of maintaining waste water treatment plant operational capability if primary energy source is interrupted. As of the date of this Consent Order and Agreement, Penn Estates has completed this Corrective Action measure.

[29] CUPAWW Statement No. 1, pp. 19-20.
[30] CO&A dated October 22, 2020, pp. 6-7, Attached as Exhibit TLF-1.

b. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Manhole Report) and phased manhole rehabilitation plan (Manhole Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Manhole Report shall include an evaluation of 100% of the manholes contained in the collection system with the Manhole Plan addressing manholes from highest to lowest priority.

c. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Gravity Report) and phased gravity collection main rehabilitation plan (Gravity Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Gravity Report shall include an evaluation of 100% of the gravity collection system including inspection reports, mapping and condition rating with the Gravity Plan addressing defects from highest to lowest priority.

d. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Structure Report) and phased wastewater treatment plant structure rehabilitation plan (Structure Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Structure Report shall include an evaluation of all treatment units comprising the wastewater treatment plant with the Structure Plan addressing treatment units from highest to lowest risk of failure.

e. On, or before December 31, 2021, Penn Estates shall install a wastewater treatment plant SCADA system, or similar, capable of monitoring and controlling operational data and functions such as, poly-aluminum chloride, chlorination, methanol, sodium bisulfate feed rates and/or concentrations, to ensure the plant effluent maintains compliance. As of the date of this Consent Order and Agreement, Penn Estates has installed the SCADA system at its WWTP, but rendering the SCADA system operational will require Penn Estates to obtain a permit for the installation of a new upgraded methanol pump and sodium bisulfate pump that is SCADA compatible. Penn Estates submitted an application for a permit for the new SCADA-compatible methanol pump and sodium bisulfate pump to the Department on June 29, 2020, and that permit application is under for review by the Department and awaiting approval.

f. Penn Estates shall submit written progress reports to the Department on a semi-annual basis that document its progress on the completion of the corrective actions in Paragraphs 3.a-e. The reports are due on or before the fifteenth (15th) day of the month following the end of each semi-annual calendar period, i.e., July 15 and January 15. The first progress report is due on or before January 15, 2021.

Q. HAS ANY OTHER OF THE COMPANY WASTEWATER SYSTEMS RECEIVED NOVs FROM DEP?

A. Yes, the Tamiment system received a NOV dated May 20, 2020 in regard to 18 monthly effluent violations that occurred between August 2019 and January 2020.

Q. DID DEP TAKE FURTHER ACTION REGARDING THE NOV RELATED TO THE TAMIMENT SYSTEM?

A. Not that I am aware of.

<u>Customer Complaints Regarding the Wastewater System</u>

Q. WHAT COMPLAINTS ARE YOU GOING TO ADDRESS?

A. The complaints listed in the CUPA's Customer Complaint Logs for the years 2019, 2020 and 2021 (through May 24, 2021) and testimony by witnesses at the Public Input Hearing, related to wastewater service.

Q. DID YOU PREPARE A SUMMARY OF THE COMPANY'S COMPLAINT LOG FOR ITS THREE WASTEWATER SYSTEMS?

A. Yes. See Exhibit TLF-WW3 for a summary of the Complaint Log for the three Company Wastewater Systems.[31]

Q. DID YOU NOTICE ANY RECURRING ISSUES IN THE COMPLAINT LOGS?

A. Yes. There have been a number of complaints about grinder pumps and basement backups due to failing grinder pumps.

Q. DID ANY CUSTOMERS RAISE QUALITY OF SERVICE ISSUES AT THE PUBLIC INPUT HEARING HELD ON JUNE 29, 2021?

[31] OCA Set I-7 (Wastewater)(confidential). I note that this response was marked confidential to protect customers' identifying information. My testimony and exhibits only present aggregate, non-customer specific information and are not confidential.

A. Yes. Based on my review of the transcript, the following customers testified about wastewater-specific quality of service issues:

- George F., Summerton Circle, Penn Estates Wastewater System testified about a grinder pump failure. Tr. 241.
- Christopher D., Long Lake Road, Tamiment Wastewater System testified that he had to replace two grinder pumps. Tr. 169.
- Michael S., Galion Drive, Tamiment Wastewater System testified that he had to replace the entire grinder pump system. Tr. 178.
- Oleg C., Brandyshire Drive, Tamiment Wastewater System testified that he had to get a new grinder pump. Tr. 198.
- Jessica C., Bombur Lane, Tamiment Wastewater System, testified that their grinder pump failed and caused a sewer backup that ruined every floor in their house and they had to cut walls 2 feet above the floor because the sewage seeped into the walls. Tr. 211.
- Joseph B., Underhill Drive, Tamiment Wastewater System, testified that he replaced his grinder pump. Tr. 232.
- Jennifer R., Old Took Drive, Tamiment Wastewater System, testified that they had a grinder pump fail. Tr. 235-236.

Q. WHAT SHOULD THE COMPANY DO IN RESPONSE TO THE CUSTOMER COMPLAINTS REGARDING GRINDER PUMPS?

A. Although grinder pumps are the responsibility of the customer, the Company should provide its customers with information regarding the proper installation, operation and maintenance of grinder pump systems. See Exhibit TLF-WW1 as an example.

Q. DOES THIS COMPLETE YOUR WRITTEN DIRECT TESTIMONY?

A. Yes, at this time. I reserve the right to supplement this testimony either in writing or orally if additional relevant information is received.

APPENDIX A

BACKGROUND AND QUALIFICATIONS

TERRY L. FOUGHT, P.E.

Education

Cleveland State University, Cleveland, Ohio, Bachelor of Civil Engineering, 1967

Professional Registrations

Professional Engineer, Pennsylvania, PE-023343-E, 1975

Professional Engineer, New Jersey, GE 25392, 1978 (Inactive)

Professional Engineer, Virginia, 10850, 1979 (Inactive)

Professional Land Surveyor, Pennsylvania, SU-000194-A, 1980 (Inactive)

Employment

From March 1983 to date, I have been a self-employed consulting engineer engaged in providing consulting engineering services to water and wastewater utilities, both private and municipal.

From May 1969 to March 1983, I was employed be E. H. Bourquard & Associates, Inc. as a project engineer to water and wastewater clients. At the time I left the firm I was a vice-president.

From 1962 to 1969, I was employed by the State of Ohio, Department of Highways and the Geauga County Ohio Sanitary Engineers Office as an engineer's assistant to assistant sanitary engineer with breaks in employment to attend college and 1½ years active duty military service.

Experience

I have prepared studies related to and designed water supply, treatment, transmission, distribution and storage facilities. I have provided services to the following private and municipal water suppliers: Amber Hill Mobile Home Park, Brockway Borough Municipal Authority, Dallas Water Company, Eastern Gas and Water Investment Company, Haddonfield Hills Development, Halifax Borough, Langhorne Spring Water Company, Mifflintown Municipal Authority, Neshaminy Water Resources Authority, Newberry Water Company, Pleasant View Mobil Home Park, H. B. Reese Candy Company, Shavertown Water Company, Smethport Water Company, Tunkhannock Water Company, and Watts Business Center.

I have prepared studies related to and designed wastewater collection and interceptor sewers, pumping stations and force mains, and treatment plants. I have provided services to the following private and municipal sewerage utilities: Brockway Glass Company, Central Dauphin School District, Clean Waste Technologies, Inc., Dauphin Borough, Dauphin Borough Municipal Authority, Halifax Area School District, Halifax Municipal Authority, Mercersburg Borough, Middle Paxton Township, Newberry Sewer Company, Newberry Township Municipal Authority, Park-a-way Park Family Campground, Reading Township Municipal Authority, Reynoldsville Borough, Saint Thomas Township, and Watts Business Center.

I have prepared over 100 stormwater management and drainage plans for land development and subdivision plans in Cumberland, Dauphin, and York Counties. Most of these plans included the design of storm sewer collection systems.

List of Public Utility cases which I have testified or provided substantial assistance:

NEW JERSEY BUREAU OF PUBLIC UTILITIES

Docket Number	Company Name
7712-1140	City of Trenton
787-847	Hackensack Water Company
814-119	City of Trenton
8310-862	City of Trenton

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket Number	Company Name
C-2010-2175673	Pennsylvania-American Water Company
C-2011-2259004	Endsley v PAWC
C-2012-2332951	Tschachler v UGI
C-2014-2447138	Hidden Valley Utility Services - Water
C-2014-2447169	Hidden Valley Utility Services - Wastewater
C-2018-2644592	Winola Water Company
C-2020-3022354	McKercher v Borough of Hanover (Water)
F-2011-2280415	Lynette Lugo Lopez v PGW
F-2012-2311590	Belinda Lyles v Aqua
F-2012-2330753	Scott v PGW
I-840377	Pennsylvania Gas and Water Company
I-00050109	PAWC High Fluoride Incident
I-00072313	WP Water & Sewer Co.
I-2009-2109324	Clean Treatment Sewer Company
I-2016-2526085	Delaware Sewer Company
P-2008-2075142	Pennsylvania-American Water Company
P-2014-2404341	Delaware Sewer Company
P-2017-2584953	Aqua Pennsylvania, Inc.
P-2017-2594725	Newtown Artesian Water Company
P-2017-2585707	Pennsylvania-American Water Company
P-2017-2589724	Suez Water Pennsylvania, Inc.
P-2020-3020914	Twin Lakes Utilities, Inc.
R-00850174	Philadelphia Suburban Water Company
R-00932785	Meadows Water Company
R-00963708 (Sewer)	Wynnewood Water & Sewer Corporation
R-00963709 (Water)	Wynnewood Water & Sewer Corporation
R-00984257	Consumers Pa. Water Company
R-00984334	National Utilities, Inc.
R-00984375	City of Bethlehem
R-00994672	Superior Water Company
R-00005031	Penn Estates Utilities, Inc.
R-00005050	Emporium Water Company
R-00005212 (Sewer)	Pennsylvania-American Water Company
R-00005997	Jackson Sewer Corporation
R-00027982 (Sewer)	Pennsylvania-American Water Company
R-00049862	City of Lancaster – Sewer Fund
R-00050607	Glendale Yearound Sewer Co.
R-00050659	Wonderview Water Co.
R-00050673	Pocono Water Co.
R-00050678	Mesco, Inc.

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

Docket Number	Company Name
R-00050814	Marietta Gravity Water Co.
R-00051030	Aqua Pennsylvania, Inc.
R-00051167	City of Lancaster – Water Fund
R-00061297	Emporium Water Co.
R-00061492	Reynolds Disposal Co.
R-00061496	Columbia Water Co.
R-00061617	Allied Utilities Services
R-00061618	Imperial Point Water Co.
R-00061625	Phoenixville Sewer Fund
R-00061645	Eaton Water Co.
R-00062017	Borough of Ambler Water Department
R-00072074 (Sewer)	Aqua PA, Little Washington Division
R-00072075 (Sewer)	Aqua PA, Chesterdale/Williamstown Division
R-00072351	Village Water Company
R-00072491	Clarendon Water Company
R-00072492	City of Bethlehem, Bureau of Water
R-00072493 (Water)	Total Environmental Solutions, Inc., Treasure Lake
R-00072711	Aqua PA
R-2008-2020729	Blue Knob Water Company
R-2008-2020873	Warwick Drainage Company
R-2008-2020885	Warwick Water Works, Inc.
R-2008-2032689	PAWC Coatesville Wastewater Operations
R-2008-2039261	Superior Water Company
R-2008-2045157	Columbia Water Company
R-2008-2047291	Rock Spring Water Company
R-2008-2079310	AQUA, PA
R-2008-2081738	Little Washington Wastewater Company
R-09-2097323	Pennsylvania-American Water Company
R-2009-2102464	Reynoldsville Water Company
R-2009-2103937	PA Utility Company, Inc (Water)
R-2009-2103980	PA Utility Company, Inc (Sewer)
R-2009-2105601	Fryburg Water Company
R-2009-2110093	Birch Acres Water Company
R-2009-2115743	Lake Spangerberg Water Company
R-2009-2116908	Hanover Borough Water
R-2009-2117289	Utilities Inc, Westgate (Water)
R-2009-2117532	Penn Estates Utilities Inc (Water)
R-2009-2117750	Newtown Artesian Water Company
R-2009-2121928	Clean Treatment Sewage Company
R-2009-2122887	United Water Pennsylvania, Inc
R-2009-2132019	AQUA, PA
R-2010-2157062	Tri-Valley Water Supply Company, Inc
R-2010-2166208	Pennsylvania American Water Company (Wastewater)
R-2010-2171339	Reynolds Disposal Company
R-2010-2171918	TESI, Treasure Lake, Water Division
R-2010-2171924	TESI, Treasure Lake, Sewer Division
R-2010-2174643	City of Lock Haven
R-2010-2179103	City of Lancaster Water Department
R-2010-2191376	Superior Water Company
R-2010-2194499	Dear Haven Water Company
R-2010-2194577	Dear Haven Sewer Company

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

Docket Number	Company Name
R-2010-2207833	Little Washington Waste Water, Masthope Division
R-2010-2207853	Little Washington Waste Water, SE Consolidated Division
R-2011-2218562	CMV Sewage Company, Inc.
R-2011-2232243	Pennsylvania-American Water Company
R-2011-2232985	United Water Company
R-2011-2244756	City of Bethlehem- Bureau of Water
R-2011-2246415	Twin Lakes Utilities, Inc.
R-2011-2248531	Wonderview Sanitary Facilities
R-2011-2248937	Fairview Sanitation Company
R-2011-2251181	Borough of Quakertown, Water
R-2011-2255159	Penn Estates Utility Inc - Water
R-2012-2286118	Audubon Water Company
R-2012-2330887	North Heidelberg Sewer Company
R-2012-2310366	City of Lancaster Sewer Fund
R-2012-2311725	Borough of Hanover - Sewer
R-2012-2315536	Imperial Point Water Company
R-2012-2336662	Rock Springs Water Company
R-2013-2350509	City of DuBois, Bureau of Water
R-2013-2355276	Pennsylvania-American Water Company
R-2013-2360798	Columbia Water Company
R-2013-2370455	Penn Estates Utilities, Inc. - Sewer Division
R-2013-2367108	Fryburg Water Company
R-2013-2367125	Cooperstown Water Company
R-2013-2390244	City of Bethlehem – Bureau of Water
R-2014-2400003	Borough of Ambler – Water Department
R-2014-2420204	Pocono Waterworks Company, Inc. (Water)
R-2014-2420211	Pocono Waterworks Company, Inc. (Sewer)
R-2014-2402324	Emporium Water Company
R-2014-2430945	Plumer Water Company
R-2014-2428304	Borough of Hanover Water Department
R-2014-2410003	City of Lancaster-Bureau of Water
R-2014-2427035	Venango Water Company
R-2014-2427189	B E Rhodes Sewer Company
R-2014-2447138	Hidden Valley Utilities Services - Water
R-2014-2447169	Hidden Valley Utilities Services – Sewer
R-2014-2452705	Delaware Sewer Company
R-2015-2462723	United Water Pennsylvania
R-2015-2470184	Borough of Schuylkill Haven Water Department
R-2015-2479962	Corner Water Supply
R-2015-2506337	Twin Lakes Utilities, Inc.
R-2016-2538600	Community Utilities of Pennsylvania, Inc.
R-2016-2554150	City of DuBois – Bureau of Water
R-2017-2595853	Pennsylvania-American Water Company
R-2017-2598203	Columbia Water Company
R-2017-2631441	Reynolds Water Company
R-2018-3000022	York Water Company
R-2018-3000834	Suez Water Company
R-2018-3002645 (Water)	Pittsburgh Water & Sewer Authority
R-2018-3002647 (Sewer)	Pittsburgh Water & Sewer Authority
R-2018-3001306 (Water)	Hidden Valley Utility Services
R-2018-3001307 (Sewer)	Hidden Valley Utility Services

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

R-2019-3008947 (Water)	Community Utilities of PA
R-2019-3008948 (Sewer)	Community Utilities of PA
R-2020-3017951 (Water)	Pittsburgh Water & Sewer Authority
R-2020-3017970 (Sewer)	Pittsburgh Water & Sewer Authority
R-2020-3019369	Pennsylvania American Water Company
R-2020-3019612	Reynolds Disposal Company
R-2020-3020256	City of Bethlehem -Water
R-2020-3020917	Audubon Water Company

OCA Exhibit TLF-W1

CUPA Response to OCA-I-8

Unaccounted For Water

8. For each of the Company's water systems, please provide calculations showing the Company's percentage of unaccounted water for the calendar years 2019 and 2020. If estimates are used, please provide the calculation and basis for each estimate. Explain all assumptions used in the calculations.

RESPONSE:

Westgate – 2019 13.4%, 2020 9.15%

PEUI – 2019 26.8%, 2020 17.69%

Tami – 2019 (data for only Sept – December) 63.93%, 2020 56.01%

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

Community Utilities of Pennsylvania Inc. For the Year Ended December 31, 2020

(Company Name)

500. WATER DELIVERED INTO SYSTEM DURING YEAR

Every estimated value shall be supported by such detailed information as will permit a ready identification, analysis, & verification of all relevant facts. The Company shall be prepared to furnish to the Commission this detailed information.

Line No.	Description (a)	(Gallons) (b)	(gpd) (c)
1	**Water Delivered for Distribution & Sale:**		
2	Water Obtained from Company Sources	163,521,398	446,780
3	Water Obtained from Other Independent Utilities	57,212,800	156,319
4	**Total Water Delivered**	**220,734,198**	603,099
5	**Metered Sales:**		
6	Residential	149,883,704	409,518
7	Commercial	2,057,418	5,621
8	Industrial		
9	Public		
10	Other Water Utilities		
11	Private Fire Protection		
12	Public Fire Protection		
13	Other Metered Sales Identify _____		
14	**Total Metered Sales**	151,941,122	415,140
15	**Unmetered Sales:**	NONE	NONE
16	Residential		
17	Commercial		
18	Industrial		
19	Private Fire Protection		
20	Public Fire Protection		
21	Other Unmetered Sales Identify _____		
21	**Total Unmetered Sales**	-	-
22	**Total Sales**	151,941,122	415,140
23	**Non-Revenue Usage Allowances:**		
24	**Authorized Unmetered Usage:**		
25	Main Flushing	2,819,672	7,704
26	Blow-off Use		
27	Others: Identify _____	1,392,222	3,804
28	Unauthorized Use		
29	Unavoidable Leakage _____ gpd/mile of main		
30	Adjustments:		
31	Located & Repaired Breaks in Mains & Services	11,749,540	32,103
32	Others Identify _PEUI WWTP_____	1,603,488	4,381
33	**Total Allowances & Adjustments**	17,564,922	47,992
34	**Unaccounted-for-Water**	**51,228,154**	
35	**Percentage Unaccounted-for-Water**	**23.2%**	

OCA Exhibit TLF-W2

CUPA Response to OCA-I-24

Isolation Valves

24. For each of the Company's water systems, please provide the following information on the isolation valves in the distribution system:
    a. does the Company keep records of when each isolation valve has been exercised?
    b. how many isolation valves are in the Company's distribution system?
    c. how many different isolation valves have been exercised during the calendar years 2019, 2020 and 2021 to date;
    d. identify the location of every isolation valves that has not been exercised during the past five years;
    e. how many new isolation valves have been installed during the calendar years 2019, 2020 and 2021 to date;
    f. How many isolation valves have been repaired during the calendar years 2019, 2020 and 2021 to date; and
    g. for every isolation valve that cannot be exercised, submit a schedule for repair or replacement of the valve.

RESPONSE:

a. does the Company keep records of when each isolation valve has been exercised?
Yes

b. how many isolation valves are in the Company's distribution system?
578

c. how many different isolation valves have been exercised during the calendar years 2019, 2020 and 2021 to date;
2020 Westgate 181 valves
2020 Penn Estates 314 valves

d. identify the location of every isolation valve that has not been exercised during the past five years;
Tamiment's valves will be located and exercised in 2021

e. how many new isolation valves have been installed during the calendar years 2019, 2020 and 2021 to date;
0

f. How many isolation valves have been repaired during the calendar years 2019, 2020 and 2021 to date;
0

g. for every isolation valve that cannot be exercised, submit a schedule for repair or replacement of the valve.

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

OCA Exhibit TLF-W3

Pressure Survey

Penn Estates

2019

Hydrant # 17 End of Locust	90 psi
Hydrant # 183 106 Reston	90 psi
Hydrant # 201 4257 Wood Acr	63 psi
Hydrant # 107 1266 Sandlewo	43 psi
Hydrant # 32 5303 Delia	103 psi
Hydrant # 81 Landsdale Drive	128 psi
Hydrant # 197 end of Fairfax	93 psi
Hydrant # 181 Stonehenge	40 psi
Hydrant # 145 end of Clicko	10 psi
Hydrant # 114 woodchuck	27 psi

2020

6119 Brentwood Ter	50 psi
1124 Belaire Dr	63 psi
431 Hyland Dr	50 psi
1271 Kensington Dr	45 psi
1223 Brentwood Dr	83 psi
1301 Brentwood Dr	35 psi
2095 Candlewood Dr	65 psi
128 Bayberry Ct	60 psi
215 Garden Ter	80 psi
6247 Willowicke Ter	47 psi
265 Spicebush Dr	100 psi
312 Ash Ter	90 psi
Hydrant # 143 Deborah	15 psi
Hydrant # 145 Clicko	5 psi
Hydrant # 187 Summerton	43 psi

2020

Hydrant Number	PSI
195	78
196	90
126	76
89	60
200	82
176	66
138	76
194	64
86	74
190	80
31	100
3	96
47	90
34	90
32	92
16	95
33	80
26	88

161	65
182	66
160	62
149	50
74	60
140	58
75	42
29	78
27	66
62	56
61	54
178	67
66	56
65	68
64	42
30	69
73	68
22	54
108	50
25	54
106	48
109	56
107	44
105	48
104	59
101	66
103	72
156	63
155	62
159	48
158	58
150	52
154	64
153	64
72	42
87	70
201	62
169	70
191	71
177	68
187	48
185	22
184	23
189	51
181	40
192	34
163	32

162	40
145	10
143	20
146	44
164	40
165	58
166	60
147	38
151	42
139	52
167	72
168	82
137	44
180	70
179	72
193	57
203	56
204	34
174	46
175	34
94	84
95	68
116	40
113	22
114	30
205	58
117	56
120	60
111	58
112	48
119	54
118	53
77	66
79	74
78	70
172	38
171	60
134	96
135	106
133	118
131	86
130	117
93	72
77	86
121	104
122	124
92	78

6	72
9	76
1	88
13	60
12	72
67	78
37	80
36	79
35	76
14	74
15	74
11	76
19	74
17	84
7	105
58	102
82	104
90	90
152	64
157	66
102	72
148	50
186	52
115	38
133	12
136	62
170	70
173	74
199	64
202	64
132	104
20	76
18	82
76	120

2021

	PSI
Hydrant # 17 End of Locust	92
Hydrant # 183 106 Reston	88
Hydrant # 201 4257 Wood Acr	38
Hydrant # 32 5303 Delia	90
Hydrant # 81 Landsdale Drive	138
Hydrant # 197 end of Fairfax	94
Hydrant # 181 Stonehenge	20
Hydrant # 145 end of Clicko	5
Hydrant # 114 woodchuck	28
Hydrant # 143 Deborah	5
Hydrant # 145 Clicko	5
Hydrant # 187 Summerton	26

Hydrant 154 Sandlewwood 84

Westgate

2013

2755 Whit 56 psi
1424 West 58 psi
1030 Bridl 70 psi
818 Blair R 72 psi
364 Kevin 71 psi

2014

1425 Statt 58 psi
1225 Ston 58 psi
2655 Woo 68 psi
855 Yorksh 74 psi
609 Blair R 71 psi
414 Kevin 72 psi

2015

1029 Blair 70 psi
430 Bridle 80 psi

2016

2755 Whit 52 psi
2400 Statt 56 psi
939 Blair R 72 psi
364 Kevin 72 psi
39 Bridle P 80 psi
56 TOA 75 psi

2021

Hydrant #	PSI
13	80
12	78
14	70
9	82
10	92
11	90
16	80
17	84
7	78
18	78
8	74
20	86
19	76
UNK	80
22	75
31	73
24	84
UNK	78
27	76
47	66
28	80
46	70

30	84
29	84
32	84
33	86
36	80
34	82
38	88
63	78
64	80
65	78
66	78
67	76
75	76
68	74
69	76
70	72
73	76
76	76
71	66
72	76
74	72
42	78
39	78
37	78
UNK	76
2	74
55	78
44	80
45	80
5	60
41	76
40	70
43	64
UNK	74
58	78
57	82
56	64
25	86
26	86
3	74
48	72
49	70
51	72
52	62
50	72
54	76
53	70

77	69
6	70
78	72

Tamiment

2020	Address	PSI
	Tamiment Golf Course near Club House	61
	Lake Drive across from The Chalet	52
	Building 113 Condor Drive	48
	Building 125 Condor Drive	48
	126 Blue Heron Road	50
	130 Blue Heron Road	64
	Tamiment Lake Drive at Blue Heron Road	48
	Tamiment Lake Road at Falcon Crest Circle	50
	1065 Bald Eagle Court	34
	1057 Bald Eagle Court	40
	1044 Falcon Crest Circle	58
	1027 Falcon Crest Circle	60
	Tamiment Lake Drive	62
	441 Underhill Drive	54
	103 Rivendell Drive	43
	Rivendell Drive at Water Tower	21
	314 Underhill Drive	48
	Across from 5123 Hemlock Lane	46
	Across from 5141 Hemlock Lane	56
	231 Ravenhill Road	54
	Bindale Road at Mirkwood Road	38
	Arkenstone Drive at Hobbit Drive	44
	Arkenstone Drive at Brandyshire Drive	54
	Cedar Crest Drive at Elrond Drive	64
	Cedar Crest Drive	58
	Cedar Crest Drive	62
	Elrond Drive	44
	Elrond Drive	42
	Elrond Drive	37
	Cherry Hill Road at Woody End Way	38
	Cherry Hill Road at Birchwood Drive	42
	Oakenshield Road	62
	Oakenshield Road	60
	Birchwood Drive	48
	Birchwood Drive	46
	Woody End Way	40
	Woody End Way	48
	241 Rivendell Drive	18
	117 Oakenshield Drive	28
	217 Old Took Drive	40
	103 Old Took Drive	40
	215 Withywindle Way	42
	101 Withywindle Way	44
	Oakenshield Drive at Swartsburo Drive	58
	1004 Woody End Way	46

Woody End Way at Lonely Mountain Lane	52
Woody End Way at Kili Way	40
1106 Long Lake Road on Woody End Way	44
1104 Woody End Way	58
Woody End Way at Gollum Lane	46
602 Carrock Way on Woody End Way	36
605 Bombur Lane on Woody End Way	42
510 Gandolf Road	40
104 Thorin Way on Balin Lane	44
Before 1008 Long Lake Road	46

OCA Exhibit TLF-W4

Complaint Log Summary

Penn Estates Water System

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls		
	2019	**2020**	**2021**
Penn Estates Water System	**thru Dec 31**	**thru Dec 31**	**thru May10**
Boil Water Advisory	0	3	0
Bottle Water - BWA	0	3	0
Curb Box Locate/Replace	1	1	0
Truck Water to Storage Tank	0	9	0
Frozen Piping	9	1	0
High Bill, Check Meter, Leaks	7	13	8
Investigate High Usage	0	9	0
Leak, Company System	3	7	1
Investigat Leak, None Found	14	37	6
Leak, Customer	20	14	3
Leak, Check For	24	18	3
Meter	19	20	3
Meter Test	1	5	2
Meter Box Repair/Replace	3	2	0
Miscellaenous	0	3	2
No Water	23	39	4
Turn Service On/Off	17	30	8
Pressure	17	40	3
Damage Restoration	3	2	1
Discolored, Dirty Water	22	25	6
Water Quality, Illness	3	1	0
Water Quality, Lead	2	0	0
Water Quality, Staining	0	1	0
Water Quality, Test	0	1	0
Taste & Odor	2	2	1
Water Quality, Well 4 Air	4	7	0
Water Quality, Well? Air	1	9	0
Totals	194	293	51

OCA Exhibit TLF-W5

CUPA Response to OCA-I-32

Well #8

32. In regard to the Penn Estates System, please discuss the status of following:
    a. Manganese in Well #8;
    c. Arsenic in Well #7;
    d. The data collection and monitoring of the SCADA network;
    e. Chlorine analyzers at Wells #5, #6 and #7.

RESPONSE:

A. Manganese in Well #8;
Well 8 has been taken off-line due to high manganese levels. An Engineer will pursue drilling a new well. The fate of Well 8 will be determined at that time.

B. Arsenic in Well #7;
Well 7 elevated Arsenic has been resolved by regular flushing of entry point service line.

C. The data collection and monitoring of the SCADA network;
New SCADA system was installed in 2020. SCADA monitors tank levels, well gpm, well chlorine entry point residual.

D. Chlorine analyzers at Wells #5, #6 and #7.
Wells 5 and 7 have Hach CL10 analyzers. Well 6 has a Hach CL17 analyzer. A CL10 analyzer will be installed in 2021.

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

OCA Exhibit TLF-W6

CUPA Response to OCA-I-5

Boil Water Advisories

5. For each of the Company's water systems, please provide a list of all Boil Water Advisories declared by the Company after the dates of those listed in the Company's filing. Include the starting dates, the dates they ended and the reasons for the Boil Water Advisories.

RESPONSE:

PENN ESTATES: 3/12/21 BWA initiated. Rescinded 3/15/21. Watermain break

8/3/20 BWA initiated. Rescinded 8/13/20. Water main breaks, elevated usage, empty storage tanks.

WEST GATE: None

TAMIMENT: None

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

OCA Exhibit TLF-W7

Complaint Log Summary

Westgate Water System

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls		
	2019	**2020**	**2021**
Westgate System	**thru Dec 31**	**thru Dec 31**	**thru May10**
Billing Adjustment	0	0	2
Curb Box, Locate, Lid	5	5	0
Flushing	1	8	1
High Bill	0	2	0
High Bill, Check Meter, Leaks	14	20	11
Main Break/Leak, Company	6	0	2
Service Line Break, Leak, Custom	0	1	0
Meter	3	1	2
Meter Test	2	1	1
Meter Replacement Program	2	7	2
Miscellaneous	4	0	1
No Water	9	0	0
Turn Service On/Off	3	2	1
Pressure	8	2	1
Damage Restoration	6	3	1
Water Quality - Dirty, Discolored	35	43	3
Water Quality - General Informati	2	2	0
Water Quality - Staining, Mold	14	2	0
Water Quality - Taste, Odor	2	0	0
Totals	110	80	25

OCA Exhibit TLF-W8

Complaint Log Summary

Tamiment Water System

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls		
	2019	**2020**	**2021**
Tamiment System	**thru Dec 31**	**thru Dec 31**	**thru May10**
Billing Adjustment	0	5	0
High Bill, Check Meter, Leaks	1	26	8
Leak, Customer	0	1	0
Meter	2	0	0
Meter Test	1	8	1
Meter Box Repair/Replace	0	0	1
No Water	8	7	2
Turn Service On/Off	0	1	3
Pressure	1	8	4
Damage Restoration	0	0	2
Water Quality, Dirty Discolored	3	0	0
Totals	16	51	21

OCA Exhibit TLF-W9

CUPA Response to OCA-I-3

Drinking Water Standard Violations

3. For each of the Company's water systems, please provide a list of all violations of primary and secondary drinking water standards from January 1, 2019 to the present. For each violation, state whether any fines or penalties were assessed by DEP.

RESPONSE: Please see attached documents in "OCA-Fought Set I – Question 3 & 4".

PROVIDED BY: Emily Ann Long

DATE: 5.24.21

Pennsylvania

Violations of primary and secondary drinking water standards from January 1, 2019 to the present.

Penn Estates

- (2019) Failure to Issue Tier 1 Public Notification

Fines/Penalties: None
Remediation: Public Notice issued, compliance achieved

- (2019) Failure to Maintain 4-Log Inactivation Disinfection Treatment

Fines/Penalties: None
Remediation: Public Notice issued, compliance achieved.

- (2019) Failure to Properly Collect or Analyze RTCR Routine Samples

Fines/Penalties: None
Remediation: Report submitted, compliance achieved.

- (2019) Failure to Monitor/Report EP Disinfectant Residual for GWR

Fines/Penalties: None
Remediation: Public Notice submitted, compliance achieved.

- (2019) Failure to Monitor/Report for D/DBP – TTHM
- (2019) Failure to Monitor/Report for D/DBP – HAA5

Fines/Penalties: None
Remediation: Public Notice submitted, compliance achieved.

- (2019) Failure to Monitor/Report for D/DBP – Chlorine

Fines/Penalties: None
Remediation: Report submitted, compliance achieved.

- (2019) MCL Violation – Arsenic

Fines/Penalties: None
Remediation: Well taken offline for the time being. If 1Q20 results are under 0.08, system will return to reduced monitoring.

- (2019) Ongoing exceedance of EPA Lifetime Health Advisory level of manganese

Fines/Penalties: None
Remediation: Well taken offline.

- (2020) Failure to Monitor/Report Routine Samples
  SOC samples submitted late

Fines/Penalties: None
Remediation: Report submitted. Public Notice will be issued with 2020 CCR.

Westgate

- (2021) Failure to Monitor/Report for D/DBP – TTHM
- (2021) Failure to Monitor/Report for D/DBP – HAA5

Fines/Penalties: None

Remediation: Report submitted. Public Notice will be issued with 2020 CCR.

Tamiment

- (2019) Failure to Monitor/Report EP Disinfectant Residual for GWR

Fines/Penalties: None
Remediation: Public Notice submitted, compliance achieved

- (2020) Chlorine Report

Fines/Penalties: None
Remediation: Report submitted, Compliance achieved

- (2020) Failure to Properly Collect or Analyze RTCR Routine Samples

Fines/Penalties: None
Remediation: Public Notice submitted, Compliance achieved

- (2020) Failure to Monitor/Report EP Disinfectant Residual for GWR

Fines/Penalties: None
Remediation: Public Notice submitted, Compliance achieved

OCA Exhibit TLF-WW1

Grinder Pump FAQs

Grinder Pump- Frequently Asked Questions

1.-What is a grinder pump?

A grinder pump is a pumping unit consisting of a pump and small pipe from the unit to the sewer system. Installed outside of your home, grinder pumps are used to discharge wastewater from your home to the sewer system in the street or right-of-way.

2.-When is a grinder pump installed instead of a traditional sewer lateral?

A grinder pump is needed when conventional gravity sewers and/or laterals cannot be used to service an area or property, often due to the topography of the area. Typically, they are needed when a home is lower than the street and/or further away from the sewers. They are also required when a low pressure sewer system is constructed instead of a gravity sewer system.

3.-Why does my property need a grinder pump when my neighbor's property can be served by gravity sewers?

Your home may either sit lower than your neighbor's, or further away from the gravity sewer in the street and could not be served by a gravity sewer/lateral. Each home is evaluated on an individual basis.

4.-Who is responsible for the grinder pump?

Most grinder pumps are installed on private property and therefore are the responsibility of the property owner. The same is true for the private sewer service line on the home or business owner's property. Augusta Utilities' responsibility for sewer service begins after the property line in the public right-of-way. Therefore the resident is responsible for the cost of the electricity needed to operate the grinder pump which will be included in your electricity bill.

5.-How much does it cost to operate a grinder pump?

With the SSCP, the plumber will install the grinder pump and connect electricity to the device. The cost for electricity to operate the grinder pump is similar to that of a 40-watt light bulb, which is about $15 to $20 per year.

6.-What can I do to protect my grinder pump?

A properly maintained grinder pump should be able to handle wastewater from the kitchen, bathroom, laundry, etc. However, some chemicals and substances can adversely impact a grinder pump and may cause safety hazards. Please check the labels on all chemicals before using / disposing. Also, never pour the following items down drains or flush down toilets:

- Grease (a byproduct of cooking that comes from meat fats, oils, shortening, butter, margarine, food scraps, sauces and dairy products);
- Explosive or flammable material;
- Kitty Litter;
- Aquarium gravel;
- Strong Chemicals or toxic, caustic or poisonous substances;
- Degreasing solvents;
- Diapers, feminine products, or cloth of any kind;
- Fuel or lubricating oil, paint thinner of antifreeze;
- Plastic objects; and
- Seafood Shells

*****These items can damage the grinder pump and its controls, cause blockages and backups and may create unsafe conditions in your lines and tank.**

7.-Does a grinder pump need regular maintenance or need to be pumped out, like my septic system?

Septic systems need to be pumped because they are tanks and need to periodically have the contents removed.

Grinder pumps do not need to be pumped out because they pump out the wastewater once the contents reach a certain level. Grinder pumps average eight years between service calls, so minimal regular maintenance is required when operated under normal conditions.

*****In addition to following the tips provided in question #6, please follow the manufacturer's recommended maintenance guidelines.**

8.-What happens during a power failure?

If the power goes out, the grinder pump will not work. However, the pump unit does have storage capacity. During power outages, the two largest producers of wastewater (dishwater and washing machine) are not in use; therefore, your water usage decreases. Because the length of the power outage cannot be planned, you should conserve water to the best of your ability.

***** Remember that your grinder pump is powered by electricity. In the event of a power outage, your pump will not work unless it is powered by a generator.**

9.-What should I do with my pump when I go on vacation?

If you plan on being away for several days, replace the wastewater in the tank with clean water to help minimize odors.

To do this,

- Run an inside faucet for about 10 minutes – long enough for the grinder pump to start working (you may need to go outside near the pump and listen to verify it has started).
- After the pump starts, turn the inside faucet off.
- The pump will run until the tank is empty and shut off automatically.
- This process will cleanse the pump and keep it filled with a minimum amount of clean water. Remember to always leave the power to the pump on.

10.-Grinder Pump Illustrations-

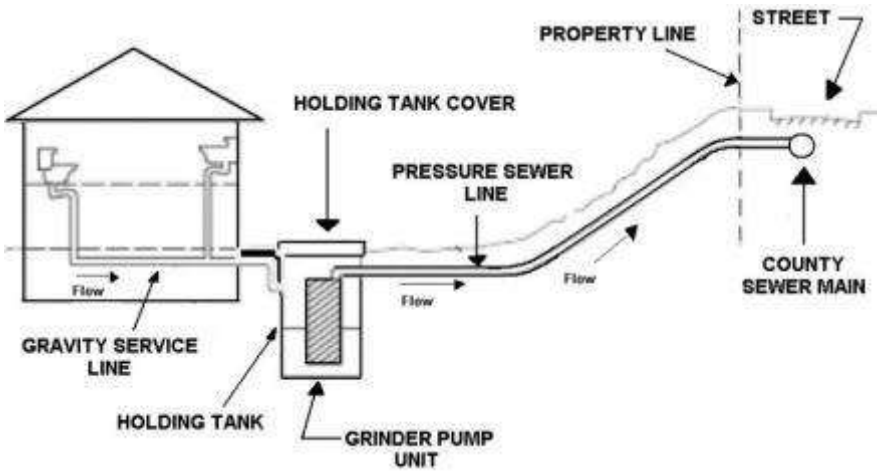

Photo above-Grinder pump station with fiberglass tank and stainless steel lid installed outside a home

Photo above-Grinder pump station with HDPE tank being installed

OCA Exhibit TLF-WW2

Penn Estates CO&A

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In The Matter Of:

Penn Estates Utilities Inc.	:	Violations of The Clean Streams Law
570 Hallet Road	:	and
East Stroudsburg, PA 18304	:	NPDES Permit No. PA0060283
	:	Stroud Township, Monroe County

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement is entered into this 22nd day of October 2020, by and between the Commonwealth of Pennsylvania, Department of Environmental Protection ("Department") and Penn Estates Utilities Inc. ("Penn Estates").

The Department has found and determined the following:

A. The Department is the agency with the duty and authority to administer and enforce The Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. § 691.1 et seq. ("Clean Streams Law"); Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code") and the rules and regulations promulgated thereunder.

B. Penn Estates is a "person" as defined in Section 1 of The Clean Streams Law, 35 P.S. § 691.1. Penn Estates maintains a mailing address of 570 Hallet Road, East Stroudsburg, Pennsylvania 18304.

C. Penn Estates owns and operates the Penn Estates Wastewater Treatment Plant ("WWTP") located in Stroud Township, Monroe County, Pennsylvania.

D. On August 27, 2012, the Department reissued National Pollutant Discharge Elimination System Permit No. PA0060283 ("NPDES Permit") to Penn Estates, which authorized a discharge of treated sewage to Unnamed Tributary #04929 to Brodhead Creek in accordance with the effluent limitations, monitoring and reporting requirements, and other conditions set forth in the NPDES Permit. The effective date of the NPDES Permit was September 1, 2012.

E. Penn Estates is required by the NPDES Permit and Sections 201 and 202 of The Clean Streams Law, 35 P.S. §§ 691.201 and 691.202, to fully comply with the effluent limits set forth in the NPDES Permit.

F. The NPDES Permit requires that effluent discharged from Penn Estates meets identified concentration criteria for certain parameters on a routine basis. Penn Estates exceeded the NPDES Permit's effluent limitations as reported by Penn Estates' monthly Discharge Monitoring Reports ("DMRs"), as follows:

Monitoring Period	Parameter	Permit Limit	Reported Value
October 2016	$CBOD_5$ *Average Monthly*	10.0 mg/L	11.5 mg/L
May 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
June 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
July 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
July 2017	Total Phosphorus *Average Monthly*	2.0 mg/L	3.1 mg/L
August 2017	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.02 mg/L
September 2017	Dissolved Oxygen *Minimum*	7.0 mg/L	6.5 mg/L
December 2017	$CBOD_5$ *Average Monthly*	10.0 mg/L	10.7 mg/L
March 2018	NO_2+NO_3 *Average Monthly*	13.0 mg/L	<13.9 mg/L
April 2018	Total Suspended Solids *Average Monthly*	10.0 mg/L	<16.7 mg/L
April 2018	Total Suspended Solids *Average Monthly Loading*	46.7 lbs/day	<61.8 lbs/day
December 2018	NO_2+NO_3 *Average Monthly*	13.0 mg/L	15.2 mg/L

G. Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), prohibits discharges from a Sanitary Sewer Overflow ("SSO"). Failure to prevent the occurrence of an SSO constitutes unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

H. Penn Estates failed to prevent the occurrences of SSOs as reported by Penn Estates' written notifications submitted to the Department, as follows:

Date of Incident	Location	Volume (gallons)	Suspected Cause
December 16, 2017	314 Overlook Drive Manhole 120	150-200	Blockage of collection between Manhole 121-122
December 21, 2018	WWTP: Equalization ("EQ") Tank	200	Excessive Rainfall

I. Penn Estates' SSOs noted in Paragraph H, constitute violations of Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), and Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

J. Part A.III.C(1). of the NPDES Permit states, in relevant part, the permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. A permit may be required for these situations prior to implementing the planned changes. A permit application, or other written submission to the Department, can be used to satisfy the notification requirements.

K. On December 24, 2018, the Department received Penn Estates' December 21, 2018 SSO report, which noted an installation of a second 10 HP pump in EQ tank 5 to replace an existing 7.5 HP pump. The Department was not notified of this change prior to the installation of the new pump.

L. Penn Estates' failure to notify the Department prior to planned physical alterations or additions to the WWTP constitutes a violation of Part A.III.C(1) of the NPDES Permit.

M. Parts A.I.A., A.I.B. and A.I.C. of the NPDES Permit requires that Penn Estates sample in accordance with the sample frequency set forth in the NPDES Permit. Failure to do so constitutes unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

N. Penn Estates failed to sample in accordance with the required sample frequency as reported by Penn Estates' monthly DMRs, as follows:

Monitoring Period	**Parameter**	**Required Frequency**	**Reported Frequency**
December 2017	Total Organic Carbon	1/month	0/month
February 2019	pH	1/day	25/28 days
	Dissolved Oxygen	1/day	24/28 days
	Total Residual Chlorine	1/day	22/28 days
March 2019	Total Residual Chlorine	1/day	29/31 days

O. On April 10, 2019, the Department sent a Notice of Violation ("NOV") notifying Penn Estates of its effluent violations noted in Paragraph F, SSO violations noted in Paragraph I, and failure to notify the Department prior to the replacement of the 7.5 HP pump noted in Paragraph L. Said NOV requested a written response within 15 days of receipt indicating the cause of the noncompliance and corrective actions taken to ensure future compliance. In addition, the Department requested Penn Estates contact the Department to discuss a permit determination evaluation regarding the EQ tank pumps.

P. On May 6, 2019, a representative of Penn Estates contacted the Department to discuss a permit determination evaluation regarding the influent EQ tank pump, as requested in the Department's April 10, 2019 NOV.

Q. On May 15, 2019, a representative of Penn Estates sent an e-mail correspondence to the Department with information regarding the influent EQ tank pump.

R. On May 17, 2019, the Department sent an e-mail correspondence notifying Penn Estates that a Water Quality Management ("WQM") Part II Permit application would need to be submitted to address the changes made to the influent EQ pumps.

S. Penn Estates again failed to prevent the occurrences of SSOs as reported by Penn Estates' written notifications submitted to the Department, as follows:

Date of Incident	Location	Volume (gallons)	Suspected Cause
March 22, 2019	WWTP: EQ Tank and pipe	5,000	Hydraulic Overload
March 23, 2019	WWTP: EQ Tank	1,260	Hydraulic Overload
April 20, 2019	WWTP: EQ Tank	300,000	Hydraulic Overload
April 22, 2019	WWTP: EQ Tank	2,340	Hydraulic Overload
May 5, 2019	WWTP: EQ Tank	16,200	Hydraulic Overload
May 12, 2019	WWTP: EQ Tank	32,600	Hydraulic Overload
May 20, 2019	WWTP: EQ Tank	24,000	Hydraulic Overload

T. Penn Estates' SSOs noted in Paragraph S, constitute violations of Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), and Section 611 of The Clean Streams Law, 25 P.S. § 691.611.

U. On June 7, 2019, Penn Estates sent a correspondence notifying the Department of a potential discharge pipe discovered by the operator following the March 22, 2019 SSO at the WWTP. The pipe was located on EQ basin 4 and was underground between EQ basin 4 and EQ basin 5. Attached to the correspondence was a site plan dated September 15, 1998, which showed the pipe labeled as an 8" Extended Aeration Effluent. Penn Estates noted that around April 11, 2019 said pipe was removed by an environmental contractor.

V. Penn Estates again exceeded the NPDES Permit's effluent limitations as reported by Penn Estates' monthly DMR, as follows:

Monitoring Period	Parameter	Permit Limit	Reported Value
June 2019	Total Residual Chlorine *Instantaneous Max*	0.01 mg/L	0.037 mg/L

W. On August 28, 2019, the Department received a WQM Part II Permit application from Penn Estates for the removal of the existing 7.5 HP transfer pump and its replacement with a 10 HP transfer pump in EQ Basin 4 noted in Paragraph K.

X. On September 11, 2019, the Department sent an NOV notifying Penn Estates of its SSOs, violations noted in Paragraph T, and an effluent violation noted in Paragraph V. Said NOV requested Penn Estates along with anyone else deemed necessary attend an enforcement conference at the Department's Northeast Regional Office on November 6, 2019.

Y. Penn Estates again exceeded the NPDES Permit's effluent limitations as reported by Penn Estates' monthly DMRs, as follows:

Monitoring Period	Parameter	Permit Limit	Reported Value
August 2019	Dissolved Oxygen *Instantaneous Max*	7.0 mg/L	6.77 mg/L
August 2019	Total Phosphorus *Average Monthly*	2.0 mg/L	2.5 mg/L
September 2019	Fecal Coliform *Instantaneous Max*	1,000/100 mL	2,700/100 mL
September 2019	NO_2+NO_3 *Average Monthly*	13.0 mg/L	16.44 mg/L

September 2019	Total Phosphorus *Average Monthly*	2.0 mg/L	2.49 mg/L
October 2019	NO_2+NO_3 *Average Monthly*	13.0 mg/L	16.0 mg/L

Z. On October 8, 2019, the Department issued WQM Permit 4598410 to Penn Estates for the replacement and upgrade to the EQ basin transfer pumps.

AA. Penn Estates' NPDES Permit requires that quarterly DMRs for the reporting of Total Dissolved Solids ("TDS") be properly completed and received by the Department within 28 days from the end of each monitoring period. Failure to do so constitutes unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

BB. Penn Estates' failed to submit a quarterly DMR for the reporting of TDS in a timely manner. Specifically, the following DMR was received by the Department later than the requirements of the NPDES Permit:

Monitoring Period	**Due Date**	**Date Received**
July 2019 – September 2019	October 28, 2019	October 30, 2019

CC. On November 6, 2019, representatives of Penn Estates met with the Department to discuss the violations noted in Paragraphs F, I, L, N, T, V, Y, BB and GG, the discovered potential discharge pipe noted in Paragraph U, and Penn Estates' intended actions to return to compliance. The Department requested Penn Estates submit to the Department a schedule of compliance, a high flow management plan, a response to the 2019 effluent exceedances, a summary and report of the smoke testing, and if available, documentation regarding the discovered discharge pipe by February 28, 2020.

DD. On November 6, 2019, Penn Estates hand-delivered a written response to the Department's April 10, 2019 NOV. Said response acknowledged the effluent violations noted in Paragraph F and provided suspected causes and corrective actions taken. The response also acknowledged the SSOs described in Paragraph H. The response further noted at the time the 7.5 HP transfer pumps were replaced, Penn Estates did not realize the installation of the replacement pumps was a violation of Part A.III.C(1) of the NPDES Permit, described in Paragraph K.

EE. On February 3, 2020, the Department received from Penn Estates the following documents as requested during the November 6, 2019 enforcement conference:

- Schedule of Compliance;
- WWTP Yard Piping Memorandum;
- WWTP Yard Pipe Drawings;
- Smoke Testing Summary and Report;
- High Flow Management Plan and;
- 2019 Effluent Exceedance Memorandum.

FF. Penn Estates again failed to prevent the occurrences of SSOs as reported by Penn Estates' written notifications submitted to the Department, as follows:

Date of Incident	**Location**	**Volume (gallons)**	**Suspected Cause**
January 26, 2020	WWTP: EQ Tank	10,000	Hydraulic Overload

April 13, 2020	WWTP: EQ Tank	15,000	Hydraulic Overload
April 24, 2020	WWTP: EQ Tank	3,000	Hydraulic Overload
April 27, 2020	WWTP: EQ Tank	5,000	Hydraulic Overload
August 4, 2020	WWT: EQ Tank	7,000 gallons	Hurricane Isaias – Hydraulic Overload

GG. Penn Estates' SSOs noted in Paragraph FF, constitute violations of Section 92a.47(c) of the Department's Regulations, 25 Pa. Code § 92a.47(c), and Section 611 of The Clean Streams Law, 35 P.S. § 691.611.

HH. The violations described in Paragraphs F, I, L, N, T, V, Y, BB, and GG constitute unlawful conduct under Section 611 of The Clean Streams Law, 35 P.S. § 691.611; a statutory nuisance under Section 601 of The Clean Streams Law, 35 P.S. § 691.601; and subject Penn Estates to civil penalty liability under Section 605 of The Clean Streams Law, 35 P.S. § 691.605.

After full and complete negotiation of all matters set forth in this Consent Order and Agreement and upon mutual exchange of covenants contained herein, the parties desiring to avoid litigation and intending to be legally bound, it is hereby ORDERED by the Department and AGREED to by Penn Estates as follows:

1. Authority. This Consent Order and Agreement is an Order of the Department authorized and issued pursuant to Section 5 of The Clean Streams Law, 35 P.S. § 691.5, and Section 1917-A of the Administrative Code, 71 P.S. § 510-17.

2. Findings.

a. Penn Estates agrees that the findings in Paragraphs A through GG are true and correct and, in any matter or proceeding involving Penn Estates and the Department, Penn Estates shall not challenge the accuracy or validity of these findings.

b. The parties do not authorize any other persons to use the findings in this Consent Order and Agreement in any matter or proceeding.

3. Corrective Action.

a. Penn Estates will install and render operational a new facility generator of sufficient capacity and an automated transfer switch capable of maintaining waste water treatment plant operational capability if primary energy source is interrupted. As of the date of this Consent Order and Agreement, Penn Estates has completed this Corrective Action measure.

b. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Manhole Report) and phased manhole rehabilitation plan (Manhole Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Manhole Report shall include an evaluation of 100% of the manholes contained in the collection system with the Manhole Plan addressing manholes from highest to lowest priority.

c. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Gravity Report) and phased gravity collection main rehabilitation plan (Gravity Plan) containing an implementation schedule which will be submitted to the Department for review and

acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Gravity Report shall include an evaluation of 100% of the gravity collection system including inspection reports, mapping and condition rating with the Gravity Plan addressing defects from highest to lowest priority.

d. On, or before January 31, 2021, Penn Estates shall submit a conditional assessment report (Structure Report) and phased wastewater treatment plant structure rehabilitation plan (Structure Plan) containing an implementation schedule which will be submitted to the Department for review and acceptance, and which schedule is to be an additional term of this Consent Order and Agreement. The Structure Report shall include an evaluation of all treatment units comprising the wastewater treatment plant with the Structure Plan addressing treatment units from highest to lowest risk of failure.

e. On, or before December 31, 2021, Penn Estates shall install a wastewater treatment plant SCADA system, or similar, capable of monitoring and controlling operational data and functions such as, poly-aluminum chloride, chlorination, methanol, sodium bisulfate feed rates and/or concentrations, to ensure the plant effluent maintains compliance. As of the date of this Consent Order and Agreement, Penn Estates has installed the SCADA system at its WWTP, but rendering the SCADA system operational will require Penn Estates to obtain a permit for the installation of a new upgraded methanol pump and sodium bisulfate pump that is SCADA compatible. Penn Estates submitted an application for a permit for the new SCADA-compatible methanol pump and sodium bisulfate pump to the Department on June 29, 2020, and that permit application is under for review by the Department and awaiting approval.

f. Penn Estates shall submit written progress reports to the Department on a semi-annual basis that document its progress on the completion of the corrective actions in Paragraphs 3.a-e. The reports are due on or before the fifteenth (15th) day of the month following the end of each semi-annual calendar period, i.e., July 15 and January 15. The first progress report is due on or before January 15, 2021.

4. Civil Penalty Settlement. Upon signing this Consent Order and Agreement, Penn Estates shall pay a civil penalty of twenty-five thousand dollars ($25,000.00). This payment is in settlement of the Department's claim for civil penalties for the violations and dates set forth in Paragraphs F, I, L, N, T, V, Y, BB, and GG, above. The payment shall be made by corporate check or the like made payable to the "Commonwealth of Pennsylvania -Clean Water Fund" and sent to Patrick Musinski, Environmental Group Manager, Pennsylvania Department of Environmental Protection, Clean Water Program, 2 Public Square, Wilkes-Barre, PA 18701-1915.

5. Stipulated Civil Penalties.

a. In the event Penn Estates fails to comply in a timely manner with the Corrective Actions listed in Paragraph 3.a.-f. of this Consent Order and Agreement, Penn Estates shall be in violation of this Consent Order and Agreement and, in addition to other applicable remedies, shall pay a civil penalty in the amount of two hundred fifty dollars ($250.00) per day for each violation.

b. In the event Penn Estates violates any DMR related monitoring requirement or permit limit established in NPDES Permit, either instantaneous or DMR related, during the term of this Consent Order and Agreement, Penn Estates shall be in violation of this Consent Order and Agreement and shall pay a civil penalty in the amount of five hundred dollars ($500.00) for each violation.

c. In the event Penn Estates experiences an SSO from any portion of its treatment and conveyance systems (which is limited to treatment and conveyance systems owned and operated by Penn Estates and does not include any Customer Service Line) during the term of this Consent Order and Agreement, Penn Estates shall be in violation of this Consent Order and Agreement and shall pay a civil penalty in the amount of one thousand dollars ($1,000.00) for each violation.

d. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month, and shall be forwarded as described in Paragraph 4 (Civil Penalty Settlement) above.

e. Any payment under this paragraph shall neither waive Penn Estates' duty to meet its obligations under this Consent Order and Agreement nor preclude the Department from commencing an action to compel Penn Estates' compliance with the terms and conditions of this Consent Order and Agreement. The payment resolves only Penn Estates' liability for civil penalties arising from the violations of this Consent Order and Agreement for which the payment is made.

f. Stipulated civil penalties shall be due automatically and without notice.

6. Additional Remedies.

a. In the event Penn Estates fails to comply with any provision of this Consent Order and Agreement, the Department may, in addition to the remedies prescribed herein, pursue any remedy available for a violation of an order of the Department, including an action to enforce this Consent Order and Agreement.

b. The remedies provided by this paragraph and Paragraph 5 (Stipulated Civil Penalties) are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy shall not be deemed to be a waiver of that remedy. The payment of a stipulated civil penalty, however, shall preclude any further assessment of civil penalties for the violation for which the stipulated penalty is paid.

7. Reservation of Rights. The Department reserves the right to require additional measures to achieve compliance with applicable law. Penn Estates reserves the right to challenge any action which the Department may take to require those measures.

8. Liability of Operator. Penn Estates shall be liable for any violations of the Consent Order and Agreement, including those caused by, contributed to, or allowed by its officers, agents, employees, or contractors. Penn Estates also shall be liable for any violation of this Consent Order and Agreement caused by, contributed to, or allowed by its successors and assigns.

9. Transfer of Site.

a. The duties and obligations under this Consent Order and Agreement shall not be modified, diminished, terminated or otherwise altered by the transfer of any legal or equitable interest in the Site or any part thereof.

b. If Penn Estates intends to transfer any legal or equitable interest in the Site which is affected by this Consent Order and Agreement, Penn Estates shall serve a copy of this Consent Order and Agreement upon the prospective transferee of the legal and equitable interest at

least thirty (30) days prior to the contemplated transfer and shall simultaneously inform the Northeast Regional Office of the Department of such intent.

10. Correspondence with Department. All correspondence with the Department concerning this Consent Order and Agreement shall be addressed to:

Clean Water Program Manager
Clean Water Program
Department of Environmental Protection
2 Public Square
Wilkes-Barre, PA 18701-1915
Phone (570) 826-2511
Fax (570) 830-3016

11. Correspondence with Penn Estates. All correspondence with Penn Estates concerning this Consent Order and Agreement shall be addressed to:

Emily Long, Area Manager
Community Utilities, Inc.
570 Hallet Road
East Stroudsburg, PA 18301
Phone 570-424-9322

With copy to:

Diana A. Silva, Esq.
Manko, Gold, Katcher & Fox, LLP
401 City Ave, Suite 901
Bala Cynwyd, PA 19004
Phone 484-430-2347
Fax 484-430-5711
Email dianasilva2@gmail.com

Penn Estates shall notify the Department whenever there is a change in the contact person's name, title, or address. Service of any notice or any legal process for any purpose under this Consent Order and Agreement, including its enforcement, may be made by mailing a copy by first class mail to the above address.

12. Force Majeure. In the event that Penn Estates is prevented from complying in a timely manner with any time limit imposed in this Consent Order and Agreement solely because of a strike, fire, flood, act of God, or other circumstance beyond Penn Estates' control and which Penn Estate, by the exercise of reasonable diligence, is unable to prevent, then Penn Estates may petition the Department for an extension of time. Penn Estates shall be entitled to the benefits of this paragraph if it notifies the Department within five (5) business days by telephone and within ten (10) business days in writing of the date that it becomes aware or reasonably should have become aware of the event impeding performance.

13. Severability. The paragraphs of this Consent Order and Agreement shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

14. Entire Agreement. This Consent Order and Agreement shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communications or prior drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein in any litigation or any other proceeding.

15. Attorney Fees. The parties shall bear their respective attorney fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Order and Agreement.

16. Modifications. No changes, additions, modifications, or amendments of this Consent Order and Agreement shall be effective unless they are set out in writing and signed by the parties hereto.

17. Titles. A title used at the beginning of any paragraph of this Consent Order and Agreement may be used to aid in the construction of that paragraph, but shall not be treated as controlling.

18. Termination. The obligations of this Consent Order and Agreement shall terminate when the Department determines in writing that Penn Estates has complied with the requirements of Paragraphs 3 and 4 above, and the Department determines that it is in the interest of public health, public safety, or the environment to terminate such obligations; such determination shall not be unreasonably withheld and shall be made within a reasonable time (not to exceed five (5) months) after Penn Estates completes the obligations in Paragraphs 3 and 4 above.

19. Execution of Agreement. This Consent Order and Agreement may be signed in counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument. Facsimile signatures shall be valid and effective.

IN WITNESS WHEREOF, the parties hereto have caused this Consent Order and Agreement to be executed by their duly authorized representatives. The undersigned representatives of Penn Estates certify under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this Consent Order and Agreement on behalf of Penn Estates; that Penn Estates consents to the entry of this Consent Order and Agreement as a final ORDER of the Department; and that Penn Estates hereby knowingly waives its right to appeal this Consent Order and Agreement and to challenge its content or validity, which rights may be available under Section 4 of the Environmental Hearing Board Act, Act of July 13, 1988, P.L. 530, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 103(a) and Chapters 5A and 7A; or any other provisions of law. [Signature by Penn Estates' attorney certifies only that the agreement has been signed after consulting with counsel.]

FOR PENN ESTATES UTILITIES INC.:

Name: Steven M. Lubertozzi
Title: President, Community Utilities of Pennsylvania, Inc.

FOR THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION:

B R Patel 10/22/2020
Bharat Patel, P.E.
Clean Water Program Manager

Ann Conserette 10/22/20
Ann Conserette
Assistant Counsel

OCA Exhibit TLF-WW3

Customer Complaint Log

Wastewater Systems

CUPA Customer Complaint/Call Logs

	Number of Complaints/Calls					
	2019		2020		2021	
Penn Estates Wastewater System	**thru Dec 31**		**thru Dec 31**		**thru May 10**	
Blocked Sewer/Lateral - Company	0		3		2	
Drainage	1		2		1	
Grinder Pump	2		1		1	
Inspect Repair	3		7		0	
Lateral Blocked	2		4		4	
Lateral Infiltration	1		0		0	
Miscellaneous	1		2		0	
Odor	1		4		2	
Turn Service On/Off	1		0		0	
Damage Restoration	0		2		0	
Septic Tank	1		0		0	
Smoke Testing/Repairs	11		13		0	
Totals		24		38		10
Tamiment System						
Blocked Sewer/Lateral - Company	0		2		0	
Sewer Backup - Co. (valve closed)	0		0		4	
Grinder Pump	0		14		3	
Lateral Blocked	2		1		1	
Odor Company WWTP/PS	0		3		1	
Turn Service On/Off	0		1		0	
Totals		2		21		9
UIP Wastewater System						
Blocked Sewer/Lateral - Company	0		2		1	
Grinder Pump	2		1		0	
Lateral Blocked - Customer	1		4		0	
Manhole Cover - Repair	0		1		0	
Odor Company WWTP/PS	2		1		0	
WWTP & Pump Station Light	0		0		2	
Totals		5		9		3

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Direct Testimony, OCA Statement 4, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DA TED: August 13, 2021
*315549

Signature: _____
Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

COMMONWEALTH OF PENNSYLVANIA

August 13, 2021

The Honorable Dennis J. Buckley
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania, Inc. - Water and Wastewater Divisions Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

Dear Judge Buckley:

Enclosed please find the Direct Testimony and Exhibits of Brian Kalcic, labeled OSBA Statement No. 1, on behalf of the Office of Small Business Advocate ("OSBA"), in the above-captioned proceedings.

As evidenced by the enclosed Certificate of Service, all known parties will be served, as indicated.

If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Erin K. Fure

Erin K. Fure
Assistant Small Business Advocate
Attorney ID No. 312245

Enclosures

cc: PA PUC Secretary Rosemary Chiavetta (Cover Letter & Certificate of Service only)
Brian Kalcic
Parties of Record

OSBA STATEMENT NO. 1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	**:**	
	:	
v.	**:**	**Docket No. R-2021-3025206**
	:	**Docket No. R-2020-3025207**
	:	
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	**:**	
WATER AND WASTEWATER DIVISIONS		

Direct Testimony and Exhibit of

BRIAN KALCIC

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

COVID-19 Backdrop
Revenue Allocation
Rate Design

Date Served: August 13, 2021

Date Submitted for the Record: _____

I. QUALIFICATIONS AND OVERVIEW

Q. Please state your name and business address.

A. Brian Kalcic, 225 S. Meramec Avenue, St. Louis, Missouri 63105.

Q. What is your occupation?

A. I am an economist and consultant in the field of public utility regulation, and principal of Excel Consulting. My qualifications are described in the Appendix to this testimony.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of the Office of Small Business Advocate ("OSBA"), which is representing the small business customers served by Community Utilities of Pennsylvania, Inc. – Water and Wastewater Divisions ("CUPA" or the "Company").

Q. What is the subject of your testimony?

A. My direct testimony addresses a number of topics. First, I will review the impact of the COVID-19 pandemic on current economic conditions, and discuss how those conditions may affect CUPA's rate request. Second, I will evaluate the propriety of the Company's proposed revenue allocation and rate design for water service, and sponsor changes to those proposals, where appropriate. Third, I will examine the propriety of CUPA's proposed revenue allocation and rate design for wastewater service, and again sponsor changes to those proposals, where appropriate. Fourth, I

will comment on certain issues raised in the Company's public input hearings, and indicate whether such issues pertain to CUPA's commercial customers.

Q. Do you have any preliminary comments?

Yes. I wish to note at the outset that my testimony and schedules reflect the Company's full water and wastewater rate requests in this proceeding. Any such reference is intended for comparison purposes only and should not be construed as a recommendation by the OSBA that the Commission grant CUPA's requests in whole or in part.

Q. How is your testimony organized?

A. My direct testimony is ordered as follows. Section I of my testimony contains my qualifications and an overview of my testimony. Section II reviews the current economic conditions that exist in face of the COVID-19 pandemic, and how those conditions should affect CUPA's rate request. In Section III, I will examine the Company's proposed revenue allocation and rate design for water service. Section IV will address the Company's proposed revenue allocation and rate design for wastewater service. Finally, in Section V, I will comment on certain issues raised at the Company's public input hearings, and determine whether such issues pertain to CUPA's commercial customers.

Q. Please summarize your recommendations.

A. Based on my analysis of the Company's filing and discovery responses, I recommend that the Commission:

- Reject CUPA's proposed revenue allocation for water service, which would entail the full consolidation of water rates across its service territory;
- Reject the Company's proposed rate design for water service;
- Adopt the OSBA's recommended revenue allocation and rate design proposals for water service customers;
- Reject CUPA's proposed revenue allocation for wastewater service, which would entail the full consolidation of wastewater rates across its service territory; and
- Adopt the OSBA's recommended revenue allocation proposal for wastewater service customers.

The specific details associated with my recommendations are discussed below.

II. COVID-19 BACKDROP

Q. Please describe the general economic environment in which this proceeding takes place.

A. CUPA filed its case on April 12, 2021. Since January 1, 2020, the COVID-19 pandemic has caused untold personal suffering and economic disruption, as evidenced by the following:

- over 36.3 million confirmed cases of COVID-19 in US; [1]
- over 619,000 confirmed deaths from COVID-19 in US;[2]
- US unemployment rate of 5.4% as of July, 2021;[3]
- Pennsylvania unemployment rate of 7.0% as of May, 2021;[4]
- East Stroudsburg unemployment rate of 7.0% as of May, 2021;[5]

Moreover, the COVID-19 pandemic remains ongoing in the US at this time, with the 7-day moving average number of new cases in the US at a level of 89,977 as of August 6, 2021, up 33.7% from a level of 67,274 in the prior week.[6]

Q. Should the Commission take the COVID-19 pandemic into account when issuing its decision in this case?

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[1] https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6; reviewed August 12, 2021.
[2] *Id*.
[3] https://fred.stlouisfed.org/series/UNRATE
[4] https://www.bls.gov/regions/mid-atlantic/pennsylvania.htm#eag
[5] https://www.bls.gov/regions/mid-atlantic/pennsylvania.htm#eag
[6] https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

A. Very much so. In the OSBA's view, this is not the time for a utility to be requesting a large rate increase from ratepayers. In particular, since the COVID-19 pandemic is ongoing, the near-term outlook for small businesses remains uncertain at best. In short, this is not a period of "business as usual" for PA small businesses, and it should not be considered "business as usual" for Pennsylvania utilities.

Q. How can the Commission address this situation?

A. The OSBA recommends that the Commission limit any CUPA rate award to the maximum extent possible.

III. WATER SERVICE

Q. Mr. Kalcic, please describe the Company's current water rate structure.

A. At present, the Company serves approximately 3,412 water customers across two rate areas.[7] Each rate area contains a rate schedule applicable to general metered service ("GMS") customers. In addition, the Company maintains a separate public fire service rate schedule within its Consolidated rate area.

Within the Consolidated rate area, all GMS customers are subject to (i) the same set of (fixed) customer charges, which vary by meter size, and (ii) a flat rate consumption charge of $9.28 per thousand gallons. Within the Tamiment rate area, all GMS customers are subject to (i) a fixed customer charge, which varies by

[7] I will refer to the Company's rate areas as the Consolidated and Tamiment service areas.

customer class but not by meter size, and (ii) a flat rate consumption charge of $5.13 per thousand gallons.

The Company's system is overwhelmingly residential in nature, with residential customers comprising 93.5% of total water service accounts, and contributing 95.5% of present water service revenues.

Q. Is CUPA proposing any changes to its current rate structure?

A. Yes. First, CUPA proposes to consolidate its Tamiment and Consolidated rate areas at the conclusion of this proceeding. Second, the Company proposes to implement a reduced consumption charge for residential low-income customers in this case, with all foregone low-income revenues recovered from non-CAP residential customers.

Q. Mr. Kalcic, how does CUPA propose to recover its requested increase in water revenues in this case?

A. Schedule BK-1 provides a summary of the Company's proposed class revenue allocation. Page 1 shows CUPA's proposed revenue allocation on a total system basis, while the Company's proposed increases to its Consolidated and Tamiment rate areas are shown on pages 2 and 3, respectively.[8]

[8] Note that this order of presentation, i.e., Total System on page 1, followed by the Consolidated and Tamiment systems on pages 2-3, applies to all of the schedules shown in Exhibit BK-1.

As shown on page 1 of Schedule BK-1, the Company's overall proposed water revenue increase is 36.9% (line 5), with class increases ranging from a low of 32.4% (Residential) to a high of 322.1% (Public Fire).

Q. How do CUPA's proposed water service increases vary across the Consolidated and Tamiment service areas?

A. Page 2 of Schedule BK-1 shows that the Company's overall proposed Consolidated increase is 29.8% (line 5), with corresponding class increases ranging from a low of 21.5% (Commercial) to a high of 322.1% (Public Fire).

Page 3 of Schedule BK-1 shows that the Company's overall proposed Tamiment increase is 80.0% (line 5), with corresponding class increases ranging from a low of 70.4% (Residential) to a high of 189.0% (Commercial).

Q. How did CUPA determine its proposed water increases shown in Schedule BK-1?

A. For the residential and commercial customer classes, the Company's proposed revenue allocation is primarily driven by two factors: 1) the relative size of CUPA's proposed increases to GMS customer versus consumption charges; and 2) CUPA's proposal to consolidate its Tamiment and Consolidated rate areas.

For the public fire protection class, the Company's proposed increase is a consequence of setting the class revenue target at 50% of the total public fire service revenue requirement shown in CUPA W Exhibit SAM-1.

Q. Please discuss CUPA's proposed GMS rate design.

A. As shown in Table 1 below, the Company is proposing to collect $1.086 million of its claimed $2.813 million water service revenue requirement via GMS customer charges and availability charges.

Table 1

Summary of CUPA's Proposed GMS Fixed Charge Revenue Requirement

Cost Category	*Revenue Requirement*	*% of Total*
	(1)	(2)
Meters & Services	$314,856	29.0%
Billing	333,714	30.8%
Unrecovered Public Fire	88,336	8.1%
Fixed Charge Recovery Adj.	348,678	32.1%
Total Fixed Recovery	$1,085,584	100.0%

Source: CUPA W Exhibit AWD-1

Q. To what does the Fixed Charge Recovery Adjustment ("FCRA") line in Table 1 refer?

A. The adjustment relates to CUPA's desire to maintain the same degree (%) of fixed charge revenue recovery at proposed rates as at present rates, so as to maintain revenue stability.[9]

Q. Is CUPA's FCRA cost based?

[9] See CUPA W Statement No. 4 at page 4.

A. No. Traditional ratemaking practice would limit customer charges to the recovery of customer-related costs and therefore exclude the Company's FCRA when designing GMS fixed charges.

Q. What is CUPA's overall proposed increase to GMS fixed charges and availability charges, and how does that increase compare to the Company's overall proposed GMS consumption charge increase?

A. The Company proposes to increase GMS fixed charge and availability charge revenues from $743,116 to $1,085,584, or 46.1%.[10] In contrast, CUPA proposes to increase GMS consumption charge revenues from $1,294,107 to $1,639,232, or only 26.7%.[11]

Q. Mr. Kalcic, do you find CUPA's overall proposed fixed charge and consumption charge increases reasonable?

A. No. As previously discussed, the Company's proposal to increase fixed charge revenues by a greater percentage than consumption charge revenues is not cost based. In addition, the Company's proposed differential increases in such charges may exacerbate individual GMS customer bill impacts, independent of the effects of rate consolidation.

Q. What do you recommend?

---

[10] Applicable fixed charge revenue at present rates of $743,116 shown in CUPA's response to I&E-RS-2-D.

[11] See CUPA's response to I&E-RS-2-D and CUPA W Exhibit AWD-1.

A. I recommend that the Commission direct CUPA to assign a uniform percentage increase to (i) overall GMS fixed charge and availability charge revenues and (ii) overall GMS consumption charge revenues. The uniform percentage increase should be determined as the residual increase necessary to achieve the Company's final rate award, if any, after determining the final increase to the public fire protection class.

Q. Do you have any comment on CUPA's proposed public fire increase in this proceeding?

A. Yes. As shown in Schedule BK-1, CUPA proposes to increase public hydrant rates by 322.1%. However, Section 1328 of the Public Utility Code limits public fire rates to 25% of fully allocated cost of service. In response to OSBA-I-2, CUPA states that it will limit public hydrant rates to 25% of fully allocated cost of service in its rebuttal testimony.

Q. Do you have any final comment on CUPA's proposed water rate design?

A. Yes. As I previously mentioned, CUPA is proposing to implement a low-income rate in the form of a reduced consumption charge for residential low-income customers. All foregone revenues associated with the Company's low-income rate proposal would be recovered from non-CAP residential customers via a higher residential consumption charge. Counsel advises that the OSBA takes no position on CUPA's low-income rate proposal, as long as all administrative costs and

foregone revenues associated with the proposal are recovered from residential customers.

Q. Please turn to the second factor driving the class increases shown in Schedule BK-1, namely, rate consolidation. Has the Company explained why it is proposing to consolidate its water service rates in this proceeding?

A. Not directly. It is my understanding that the Commission approved the Company's prior rate consolidation proposal in CUPA's last base rate case, and CUPA apparently believes that rate consolidation remains an appropriate rate design goal in this case.

Q. Do you agree with the Company that rate consolidation is an appropriate rate design goal?

A. I do, since rate consolidation is necessary to implement the Commission's long-standing policy of single tariff pricing.

Q. Are you therefore in agreement with the Company's proposal to consolidate its Tamiment and Consolidated rate areas at the conclusion of this proceeding?

A. No, I am not. In the OSBA's view, the outstanding question in this proceeding is whether CUPA's Tamiment rate area should be moved *to* or *toward* full rate consolidation at this time.

I note that this is the first rate case since CUPA acquired the Tamiment systems in August of 2019.[12] In my experience, rate consolidation is a process that is often carried out over two or more rate proceedings, depending on the magnitude of the difference in rates across rate areas. In this instance, page 3 of Schedule BK-1 shows that full rate consolidation over this one rate case would necessitate imposing an overall increase of 80.0% on Tamiment customers, which may be compared to CUPA's overall system average increase of 36.9%.

The magnitude of the increase required to consolidate the Tamiment rate area, coupled with the ongoing impacts of the COVID-19 pandemic, leads me to conclude that it would not be appropriate to fully consolidate CUPA's Tamiment system rates at the conclusion of this proceeding.

Q. What do you recommend?

A. In order to mitigate rate impacts on Tamiment system customers in this proceeding, I recommend that the Commission direct CUPA to (i) consolidate (only) the GMS customer charges and availability charges paid by customers in the Tamiment and Consolidated rate areas, and (ii) eliminate one-half of the existing difference in GMS consumption charges of $4.15 per thousand gallons across the two rate areas. Further consolidation of Tamiment system rates should be addressed in CUPA's next rate case.

[12] See CUPA's response to OSBA-II-1.

IV. WASTEWATER SERVICE

Q. Please describe the Company's current wastewater rate structure.

A. At present, the Company serves approximately 3,971 wastewater customers across two rate areas.[13] Each rate area contains a rate schedule applicable to residential, commercial and/or schools, collectively, general service ("GS") customers. Each rate area also includes an availability charge.

Within the Consolidated rate area, all GS customers are subject to a fixed monthly service charge. Within the Tamiment rate area, all GS customers are subject to (i) a fixed customer charge, which varies by customer class but not by meter size, and (ii) a flat rate usage charge of $13.73 per thousand gallons.

The Company's wastewater system is overwhelmingly residential in nature, with residential customers comprising 95.3% of total wastewater service accounts, and contributing 97.5% of present wastewater service revenues.

Q. Is CUPA proposing any changes to its current rate structure?

A. Yes. CUPA is proposing to consolidate its Tamiment and Consolidated rate areas at the conclusion of this proceeding.

Q. Mr. Kalcic, how does CUPA propose to recover its requested increase in wastewater revenues in this case?

[13] I will refer to the Company's wastewater rate areas as the Consolidated and Tamiment service areas.

A. Schedule BK-2 provides a summary of the Company's proposed class revenue allocation. Page 1 shows CUPA's proposed revenue allocation on a total system basis, while the Company's proposed increases to its Consolidated and Tamiment rate areas are shown on pages 2 and 3, respectively.

As shown on page 1 of Schedule BK-2, the Company's overall proposed wastewater revenue increase is 37.5% (line 5), with class increases ranging from a low of -32.5% (Commercial) to a high of 174.5% (Availability).

Q. How do CUPA's proposed wastewater service increases vary across the Consolidated and Tamiment service areas?

A. Page 2 of Schedule BK-2 shows that the Company's overall proposed Consolidated increase is 41.6% (line 5), with corresponding class increases ranging from a low of 35.2% (Schools) to a high of 74.7% (Availability).

Page 3 of Schedule BK-2 shows that the Company's overall proposed Tamiment increase is 19.8% (line 5), with corresponding class increases ranging from a low of -68.4% (Commercial) to a high of 200.2% (Availability).

Q. How did CUPA determine its proposed wastewater increases shown in Schedule BK-2?

A. The Company's proposed rate design reflects the recovery of its claimed wastewater revenue requirement from customer classes based on (i) each class's cost equivalency factor and (ii) the number of bills.[14] The difference in proposed

[14] See CUPA WW Statement No.4 at page 3.

class increases across the Consolidated and Tamiment rate areas is due to CUPA's rate consolidation proposal.

Q. Mr. Kalcic, do you find CUPA's general wastewater rate design approach reasonable?

A. Yes, particularly since the fixed monthly service charge that results is already applicable to the majority of CUPA's wastewater customers, i.e., to customers in CUPA's Consolidated rate area.

Q. Do you agree with the Company's proposal to consolidate its Tamiment and Consolidated rate areas in this case?

A. No. In this instance, rate consolidation would favor Tamiment system customers since Tamiment wastewater rates are generally higher than CUPA's Consolidated system rates. However, in order to mitigate the rate impacts on Consolidated system customers shown on page 2 of Schedule BK-2, and to be consistent with my recommendation with respect to *not* fully consolidating water rates, I would recommend that CUPA target its Tamiment system customers with an overall increase of approximately 28.0%, or 0.75 times the system average. Further consolidation of Tamiment system wastewater rates should be addressed in CUPA's next rate case.

V. MISCELLANEOUS ISSUES

Q. What topic do you wish to address in this section of your testimony?

A. I am advised by Counsel that certain customer service issues were aired by residential ratepayers during the Company's public input hearings. While I understand that no commercial customers testified at the public input hearings, the OSBA nevertheless sought to ascertain through discovery whether CUPA may have received similar types of complaints from small business customers over the past twelve months.

Q. Did the Company receive any complaints from commercial customers regarding water quality issues over the last twelve months?

A. For the record, the OSBA wishes to note that CUPA received no such complaints from commercial customers.[15]

Q. Does this conclude your direct testimony?

A. Yes.

[15] See CUPA's response to OSBA-I-1.

EXHIBIT BK-1

Schedules BK-1 and Schedule BK-2

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate Water Revenue
Basis: Total System under Consolidated Rates
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,963,901	$635,337	32.4%
2	Commercial	$35,353	$21,638	61.2%
3	Availability	$35,394	$33,280	94.0%
4	Public Fire	$20,929	$67,406	322.1%
5	Total Company	$2,055,577	$757,661	36.9%

$757,517	Target
$144	Rounding

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate Water Revenue
Basis: Currently Consolidated Service Territories
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,709,788	$456,343	26.7%
2	Commercial	$26,978	$5,808	21.5%
3	Availability	$10,282	($1,908)	-18.6%
4	Public Fire	$20,929	$67,406	322.1%
5	Total	$1,767,976	$527,650	29.8%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate Water Revenue
Basis: Tamiment Service Territory
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue 1/	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$254,114	$178,994	70.4%
2	Commercial	$8,375	$15,830	189.0%
3	Availability	$25,112	$35,188	140.1%
4	Public Fire	$0	$0	-
5	Total	$287,600	$230,012	80.0%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Wastewater Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate WW Revenue
Basis: Total System under Consolidated Rates
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$2,596,876	$931,393	35.9%
2	Commercial	$13,243	($4,300)	-32.5%
3	Schools	$16,451	$5,787	35.2%
4	Availability	$37,759	$65,908	174.5%
5	Total Company	$2,664,330	$998,789	37.5%
			$998,705	Target
			$84	Rounding

Source: CUPA Response to I&E-RS-2-D & CUPA WW Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Wastewater Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate WW Revenue
Basis: Currently Consolidated Service Territories 1/
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$2,132,470	$885,884	41.5%
2	Commercial	$4,339	$1,788	41.2%
3	Schools	$16,451	$5,787	35.2%
4	Availability	$7,715	$5,759	74.7%
5	Total	$2,160,974	$899,219	41.6%

Source: CUPA Response to I&E-RS-2-D & CUPA WW Exhibit AWD-1.

Community Utilities of Pennsylvania, Inc. - Wastewater Division

Company Proposed Allocation of its
Requested Increase in Total Base Rate WW Revenue
Basis: Tamiment Service Territory
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue 1/	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$464,407	$45,510	9.8%
2	Commercial	$8,904	($6,088)	-68.4%
3	Schools	$0	$0	-
4	Availability	$30,045	$60,149	200.2%
5	Total	$503,356	$99,570	19.8%

Source: CUPA Response to I&E-RS-2-D & CUPA WW Exhibit AWD-1.

REFERENCED INTERROGATORY RESPONSES

I&E-RS-2-D

OSBA-I-1
OSBA-I-2

OSBA-II-1

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc. Wastewater Divisions; Docket No. R-2021-3025207

Community Utilities of Pennsylvania Inc. Wastewater Divisions' Responses to Bureau of Investigation and Enforcement Data Requests Set RS Nos. 1-9

I&E-RS-2-D Provide the amount of Forfeited Discount revenue received in 2018 and 2019.

RESPONSE: Please refer to the attached file, "Response to I&E-RS-3-D Historical Forfeited Discounts".

PROVIDED BY: Perry Brown, Financial Planning & Analysis Manager

DATE: May 18, 2021

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc.
Water and Wastewater Divisions; Docket No. R-2021-3025206, R-2021-3025207

Community Utilities of Pennsylvania Inc.
Responses to Office of Small Business Advocate Interrogatories, Set I Nos. 1-5

1. Please provide a copy of the log of all complaints received from commercial customers regarding water quality issues in the last twelve months. Include the date of the complaint, the date of CUPA's response, any action taken by CUPA, and whether the issue was resolved to the customer's satisfaction.

RESPONSE: There were no water quality complaints from commercial customers in the last 12 months.

PROVIDED BY: **David Clark**

DATE: **July 22, 2021**

2. Reference CUPA W Statement No. 4, at page 3.

   a. Please confirm that CUPA's fire protection class is comprised solely of public (rather than private) fire protection customers.
   b. Please explain why CUPA is not proposing to limit public fire protection rates to 25% of fully allocated cost of service, consistent with Section 1328 of the Public Utility Code.

RESPONSE:

   a. Confirmed.
   b. CUPA should have limited public fire protection rates to 25% of fully allocated cost of service and will adopt this position in its rebuttal testimony.

PROVIDED BY: **Andrew Dickson**

DATE: **July 22, 2021**

Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania Inc.
Water and Wastewater Divisions; Docket No. R-2021-3025206, R-2021-3025207

Community Utilities of Pennsylvania Inc.
Responses to Office of Small Business Advocate Interrogatories, Set II No. 1

1. Reference Section 2, Supporting Schedule No. 1, page 3 of 3, Water Service, contained in CUPA's response to I&E-RS-1.
    a. Line 17 of the referenced schedule shows a Tamiment commercial water service category containing two 6" meters, with zero usage associated with the meters. How many customers are billed for the 6" meters?
    b. Please identify the most recent month(s) that reflect usage for the referenced 6" meters.
    c. Why is the Company projecting zero annual usage for the referenced 6" meters?
    d. Please describe in detail the type of commercial business operations associated with the 6" meters.

RESPONSE: **a. All billings related to the 6" meter as reflected in line 17 are associated with the customer "Mount Laurel Center for Performing Art".**
b. There has been no water usage for this customer since the Tamiment systems were acquired in August of 2019.
c. This is a convention center that has been shut down and is for sale, so no water is being used.
d. Please refer to the responses to "a" and "c" above.

PROVIDED BY: **David Clark**

DATE: **August 2, 2021**

APPENDIX

APPENDIX

Qualifications of Brian Kalcic

Mr. Kalcic graduated from Benedictine University with a Bachelor of Arts degree in Economics in December 1974. In May 1977 he received a Master of Arts degree in Economics from Washington University, St. Louis. In addition, he has completed all course requirements at Washington University for a Ph.D. in Economics.

From 1977 to 1982, Mr. Kalcic taught courses in economics at both Washington University and Webster University, including Microeconomic and Macroeconomic Theory, Labor Economics and Public Finance.

During 1980 and 1981, Mr. Kalcic was a consultant to the Equal Employment Opportunity Commission, St. Louis District Office. His responsibilities included data collection and organization, statistical analysis and trial testimony.

From 1982 to 1996, Mr. Kalcic was employed by the firm of Cook, Eisdorfer & Associates, Inc. During that time, he participated in the analysis of electric, gas and water utility rate case filings. His primary responsibilities included cost-of-service and economic analysis, model building, and statistical analysis.

In March 1996, Mr. Kalcic founded Excel Consulting, a consulting practice that offers business and regulatory analysis.

Mr. Kalcic has previously testified before the state regulatory commissions of Delaware, Indiana, Kansas, Kentucky, Maine, Massachusetts, Minnesota, Missouri, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas, and also before the Bonneville Power Administration.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**Docket No. R-2021-3025206**
	:	**Docket No. R-2021-3025207**
	:	
Community Utilities of Pennsylvania, Inc. Water Divisions	:	
Community Utilities of Pennsylvania, Inc. Wastewater Divisions	:	

VERIFICATION

I, Brian Kalcic, hereby state that the facts set forth in my Direct Testimony labeled OSBA Statement No. 1 are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities).

Date: August 12, 2021

(Signature)

Brian Kalcic

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**R-2021-3025206**
	:	**R-2021-3025207**
Community Utilities of PA, Inc.	:	
Water/Wastewater	:	

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email (*unless other noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

The Honorable Dennis J. Buckley
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120
debuckley@pa.gov

Allison C. Kaster, Esquire
Bureau of Investigation & Enforcement
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(Counsel for Community Utilities of PA)

/s/ Erin K. Fure

Erin K. Fure
Assistant Small Business Advocate
Attorney ID No. 312245

DATE: August 13, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

CUPA WW STATEMENT NO. 2-R

REBUTTAL TESTIMONY

OF

PERRY BROWN

REVENUES, EXPENSES, AND RATE BASE

WASTEWATER DIVISION

Contents

Introduction 1
Forfeited Discounts 1
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Employee Benefits 3
Rate Case Expense 5
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Introduction

Q. ARE YOU THE SAME PERRY BROWN THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING ON JUNE 11, 2021, ON BEHALF OF COMMUNITY UTILITIES OF PENNSYLVANIA ("CUPA") OR ("THE COMPANY") WASTEWATER DIVISION?

A. Yes.

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF PENNSYLVANIA PUBLIC UTILTIY COMMISSION'S BUREAU OF INVESTIGATION AND ENFORCEMENT ("I&E") AND THE OFFICE OF CONSUMER ADVOCATE?

A. Yes, I have.

Q. DO YOU HAVE ANY MATTERS THAT YOU WOULD LIKE TO ADDRESS IN REBUTTAL?

A. Yes. There are several items discussed in the testimony of OCA and I&E to which I would like to respond.

Forfeited Discounts

Q. I&E WITNESS WALKER RECOMMENDS CUPAD INCREASE FORFEITED DISCOUNT BY THE SAME INCREASE GRANTED BY THE COMMISSION HOW DO YOU RESPOND?

A. The Company accepts this recommendation and will adjust its forfeited discount to reflect the same increase percentage approved by the Commission.

Salaries

Q. OCA WITNESS SHERWOOD RECOMMENDED THAT CUPA BE LIMITED TO A 3% INCREASE FOR SALARY AND WAGES. HOW DO YOU RESPOND?

A. OCA Witness Sherwood reduced salary expenses by year to reflect a three percent salary increase on the basis that it was reasonable. Sherwood's approach is not reasonable and inconsistent with the FPFTY. Sherwood states three percent is reasonable but provides no data to support her position – without support this proposed three percent adjustment should be excluded. *Id.* The three percent is a previous internal budgeting guidepost that does not account for newly created positions or promotions. The Company has provided support that the actual annual merit increases have exceeded 3% recommended by OAC over the last 4 years.

Table 1
Midwest/MidAtlantic Annual Salary Increase

	2018	2019	2020	2021	4 Year Average
Increase %	5.42%	3.62%	4.52%	4.23%	4.45%

OCA witness Sherwood adjusts the Company's claim for 2022 salary by removing merit increases for all vacant positions. The Company agrees with these adjustments. The removal will reduce the Company's claim for salaries and wages by $1,426.

Q. WHAT IS CUPA'S ADJUSTED CLAIM FOR SALARIES AND WAGES FOR THE FPFTY.

A. The Company's claim for salary and wages for the FPFTY should reflect an expense amount of $396,996.

Employee Benefits

Q. PLEASE EXPLAIN I&E WITNESS WALKER'S ADJUSTMENT TO EMPLOYEE PENSION AND BENEFITS?

A. Walker recommends a reduction of $38,916 to the Company's FPFTY claim for Employee Pension and Benefits expense. Walker's recommendation is based this adjustment on the historical decline of employee pensions and benefits expense as a percentage of the Company's salaries and wages expense over the last three years.

Q. DO YOU AGREE WITH I&I WITNESS WALKER'S RECOMMENDATION TO ADJUST EMPLOYEE PENSION AND BENEFITS.

A. No.

Q. PLEASE EXPLAINS WHY.

A. Walker's historical approach to determine a going forward level of expense ignores the spirit of a fully projected future test year. Historical data should not be used when the amounts proposed have been developed using assumptions that are known and measurable. The Company's claim for employee pension and benefits contains two components, Retirement Benefits and Healthcare Benefits.

The calculation of retirement benefits is based on a percentage of each employee's salary as outlined in the Company's benefits guide. Included in the Company's claim is 3% non-elective contributions and a contribution match of 4% for non-elective retirement benefits. These assumptions can be found in "CUPA WW Exhibit No. PB-2R-CONFIDENTIAL". Any adjustment that does not explicitly factor in these known assumptions should not be considered reasonable and is inconsistent with how the Company's incurs its retirement benefit expenses. Table 2 below shows retirement costs as a percentage of salaries and

wages for CUPA and the cost centers that allocate salary and benefit cost to CUPA ratepayer. The table shows a stable retirement expense percentage to salaries and wages from 2019 through 2021. I have excluded 2018 costs from the analysis because retirement benefits were allocated to all subsidiaries from WSC based on Equivalent Residential Connection or "ERC". These are now being directly charged to each business unit based on headcount.

Table 2

Commmunity Utilities of Pennsylvania			
	FY2019	**FY2020**	**YTD 2021**
Salaries & Wages[1]	489,249	648,273	375,912
Retirement	24,740	33,202	22,849
Retirement % of Salary	5.06%	5.12%	6.08%
MidAtlantic			
	FY2019	**FY2020**	**YTD 2021**
Salaries & Wages[1]	147,592	128,857	165,026
Retirement	8,315	4,710	12,878
Retirement % of Salary	5.63%	3.65%	7.80%
Midwest/MidAtlantic Region			
	FY2019	**FY2020**	**YTD 2021**
Salaries & Wages[1]	1,069,770	1,189,471	612,758
Retirement	62,784	67,346	43,853
Retirement % of Salary	5.87%	5.66%	7.16%

1 Excludes Capitalized Time

The Company's claim for healthcare benefits is based on projected costs per employee. These costs are developed using an outside consultant Hays Company who uses industry data and the Company's historical care costs. Additional details developed by Hays Companies that were used to develop the healthcare forecast in "CUPA WW Exhibit No. PB-3R-CONFIDENTIAL". Neither forecasted or historical healthcare costs have any correlation to salaries and wages therefore these costs should not be gauged as a percentage of salaries for a going forward levels of employee pension and benefits expense.

Rate Case Expense

Q. PLEASE EXPLAIN I&E WITNESS WALKER'S ADJUSTMENT TO RATE CASE EXPENSE?

A. I&E witness reduces the Company's FPFTY claim for rate case expense by $7,131. Walker recommends normalization of rate case expense as opposed to amortizing. With the normalization treatment Walker removes unamortized rate case expense in the O&M claim. Additionally Walker removes $140,084 deferred rate case expense from CUPA's rate base claim.

Q. HOW DO YOU RESPOND TO I&E WITNESS WALKER'S RECOMMENDATION TO NORMALIZE RATE CASE EXPENSE?

A. The Company agrees and will adopt Walker's recommendation to use normalization for ratemaking purposes. The Company also agrees to remove unamortized rate case expense from the development of the normalized level of rate case expense.

Q. DOES THE COIMPANY HAVE ANY ADJUSTMENT TO ITS CLAIM FOR RATE CASE EXPENSE.

A. Yes, the Company is recommending a normalization period of 3 years.

Q. PLEASE PROVIDE THE ADJUSTED CLAIM FOR RATE CASE EXPENSE.

A. CUPA is proposing a claim of $46,695 for the FPFTY period. This amount reflects the removal of unamortized rate case expense along with the adjusted normalization period of 3 years.

Q. WHY IS IT APPROPRIATE FOR CUPA TO ADJUST THE PROPOSED NORMALIZATION PERIOD?

A. The proposed normalization periods does not allow for the Company the opportunity to recover the cost of rate case expense before its next rate case based on the historical frequency. The unrecovered costs from the previous case presented in the current case are costs the shareholder is forfeiting as a result of the normalization period outlined in the previous case. The shareholder should be allowed the opportunity to recovery of all prudent expenses despite the frequency of the need for rate relief. These expenses occur at frequencies that are known based on a historical filing cycles therefore they should not be deemed irregular.

Q. HOW DO YOU RESPOND TO I&E WITNESS WALKER'S RECOMMENDATION TO REMOVE DEFERRED RATE CASE EXPENSE FROM RATE BASE?

A. The Company did not included any deferred rate case expense in its rate base claim.[1] Therefore Walker's $118,312 adjustment should not be considered in the Company's final rate base claim. Please refer to "CUPA WW Exhibit No. PB-1R" for the deferred charges detail included in the CUPA's claim.

[1] During the review of the parties direct testimony, CUPA became aware of an error in the direct testimony of David Clark, CUPA St. No. 3 at 18 which indicated that CUPA is proposing deferred additions to deferred rate case expense. This statement was in error and CUPA will correct the statement on Page 20 in an errata to CUPA St. No. 3.

Q PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ADJUSTMENT TO RATE CASE EXPENSE?

A. Sherwood also recommends normalization of rate case expense as opposed to amortizing. Sherwood accepts the original proposal to normalize rate case expense over 4 years.

Q. HOW DO YOU RESPOND TO OCA WITNESS SHERWOOD'S RECOMMENDATION TO NORMALIZE RATE CASE EXPENSE?

A. As stated above the Company agrees to normalize rate case expense for ratemaking purposes however CUPA is proposing a normalization period of 3 years.

Recovery Mechanism

Q. PURSUANT TO THE ORDER GRANTING THE JOINT PETITION FOR EXTENSION OF PROCEDURAL SCHEDULE ENTERED JULY 22, 2021, BY CHIEF ALJ CHARLES RAINEY, THE SUSPENSION PERIOD FOR RATES WAS EXTENDED FROM JANUARY 12, 2022 TO FEBRUARY 18, 2022. THE ORDER FURTHER ALLOWED CUPA TO RECOVER ANY RATE INCREASE GRANTED BACK TO THE ORIGINAL SUSPENSION DATE OF JANUARY 12, 2022, AND A RECOVERY MECHANISM WOULD BE DETERMINED AT A LATER TIME. DO YOU HAVE ANY COMMENT ON A RECOVERY MECHANISM AT THIS TIME?

A. Yes, I am advised by Counsel that in other recent proceedings where the suspension period was extended, a recovery mechanism was proposed and ultimately settled on. In particular, in Pennsylvania American Water Company's 2020 base rate proceeding at Docket No. R-2020-3019369 et al. where the procedural schedule was similarly extended, the parties entered a settlement, which the Commission ultimately approved, that provided:

> **E. Effective Date**
>
> 72. The Joint Petitioners agree to the implementation of the Settlement Rates on January 28, 2021, when the suspension period will expire. Upon the entry of a Commission Order approving this Joint Petition, the Company will be permitted to file a tariff for water service, in the form attached hereto as Appendix A, and a tariff for wastewater service, in the form attached hereto as Appendix B, reflecting the agreed-to additional operating revenue to become effective in two installments on January 28, 2021 and January 1, 2022, respectively. The Company's proposed limitation of liability provisions, which are outlined in the direct and rebuttal testimony of PAWC witness Ashley Everette, have been reflected in the proposed tariffs for water service and wastewater service provided in Appendices A and B.
>
> 73. If Commission approval of this Settlement occurs after January 28, 2021, the Joint Petitioners agree that PAWC shall be entitled to recoup the revenue increase not billed from the effective date through the date of PUC approval of new rates in the manner set forth in the Commission's final Order in this proceeding. The revenue increases not billed from the effective date through the date of PUC approval of new rates will be recovered over a six-month period that shall be applied proportionately to all customer classes.

See Pennsylvania Pub. Util. Comm'n v. PAWC, Docket Nos. R-2020-3019369 et al., Opinion and Order at 26-27; 35-38 (Order entered February 25, 2021).

Q. WHAT DOES CUPA PROPOSE FOR THE RECOVERY MECHANISM FOR RATE RECOVERY BACK TO THE ORIGINAL SUSPENSION PERIOD?

A. Similar to the PAWC settlement, CUPA proposes that it be entitled to recoup the revenue increase not billed from the original effective date of January 12, 2022, through the date of any final PUC approval of new rates over a six-month recovery period where the difference in current rates and any approved rates shall be calculated and applied proportionately to all customer classes via a surcharge on each monthly bill during the six-month recovery period.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

CUPA WW Exhibit No. PB-1R

Community Utilities of Pennsylvania Inc.

w/p [u]

AMORTIZATION OF DEFERRED CHARGES (ACTUAL AND FORECASTED)

Future Test Year Ended December 31, 2022

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
							12/31/20	12/31/20	12/31/20	2021	2021	12/31/2021	2022	2022	12/31/2022
Line #		Asset #	Description	Life Months	Start	End	*Def Charges*	*Accumulated Amortization*	NBV	Additions	Amortization	NBV	Additions	Amortization	NBV
1	***Def Chgs - Tank Maint and Repair***														
2	*Water*	1011554	DEF CHGS-TANK MAINT&REP	60	11/14/2018	11/14/2023	11,038	(4,784)	6,254	-	(2,208)	4,046	-	(2,208)	1,839
3	*Water*	1012242	TANK 1 AND 2 ROV	60	12/10/2019	12/10/2024	6,900	(1,497)	5,403	-	(1,380)	4,023	-	(1,380)	2,643
4	*Sewer*	1012384	DEF CHGS-TANK MAINT&REP	60	03/04/2020	3/4/2025	4,100	(684)	3,416	-	(820)	2,596	-	(820)	1,776
5	*Sewer*	1012494	DEF CHGS-TANK MAINT&REP	60	05/15/2020	5/15/2025	12,300	(1,641)	10,659	-	(2,460)	8,199	-	(2,460)	5,739
6	*Sewer*	1012762	TANKS, FILTER, SPHEROID, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	16,400	(273)	16,127	-	(3,280)	12,847	-	(3,280)	9,567
7	*Sewer*	1012764	TANKS, FILTER, SPHEROID, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	8,200	(137)	8,063	-	(1,640)	6,423	-	(1,640)	4,783
8	*Water*	1012766	TANKS, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	6,900	(115)	6,785	-	(1,380)	5,405	-	(1,380)	4,025
9	*Water*	1012767	TANKS, STANDPIPE MAINT INSPECTIONS	60	12/21/2020	12/21/2025	6,900	(115)	6,785	-	(1,380)	5,405	-	(1,380)	4,025
10	*Water*	1011415	WTR-PERMITS	120	10/16/2018	10/16/2028	5,107	(1,150)	3,957	-	(511)	3,446	-	(511)	2,936
11				**TOTALS**			77,845	(10,396)	67,448	-	(15,058)	52,390	-	(15,058)	37,332
12	***Def Chgs - Other Water and Sewer***														
13	*Water*	*1010637*	(JUNE) LAB TESTING	36	07/13/2017	7/13/2020	9,327	(9,327)	-	-	-	-	-	-	-
14	*Water*	*1012314*	DEF CHGS-OTHER WTR & SW	24	01/23/2020	1/23/2022	362	(181)	181	-	(181)	-	-	-	-
15	*Water*	*1012228*	DEF CHGS-OTHER WTR & SW	48	11/18/2019	11/18/2023	5,412	(1,579)	3,833	-	(1,353)	2,480	-	(1,353)	1,127
16	*Sewer*	*1011870*	DEF CHGS-OTHER WTR & SW	60	06/14/2019	6/14/2024	12,300	(3,902)	8,398	-	(2,460)	5,938	-	(2,460)	3,478
17	*Sewer*	*1012125*	DEF CHGS-OTHER WTR & SW	60	10/10/2019	10/10/2024	20,500	(5,133)	15,367	-	(4,100)	11,267	-	(4,100)	7,167
18	*Sewer*	*1012126*	DEF CHGS-OTHER WTR & SW	60	10/07/2019	10/7/2024	41,000	(10,267)	30,733	-	(8,200)	22,533	-	(8,200)	14,333
19	*Sewer*	*1012133*	DEF CHGS-OTHER WTR & SW	60	10/10/2019	10/10/2024	24,600	(6,160)	18,440	-	(4,920)	13,520	-	(4,920)	8,600
20	*Water*	*1012283*	DEF CHGS-OTHER WTR & SW	60	01/31/2020	1/31/2025	5,820	(1,164)	4,656	-	(1,164)	3,492	-	(1,164)	2,328
21	*Sewer*	*1012477*	DEF CHGS-OTHER WTR & SW	60	05/26/2020	5/26/2025	24,600	(3,282)	21,318	-	(4,920)	16,398	-	(4,920)	11,478
22	*Water*	*1012503*	METER READING - SENSUS SUPPORT	576	05/29/2020	5/29/2068	5,736	(80)	5,657	-	(120)	5,537	-	(120)	5,418
23				**TOTALS**			149,656	(41,074)	108,582	-	(27,417)	81,165	-	(27,236)	53,928
24	***Def Chgs - Multi Yr Testing***														
25	*Water*	*1005715*	PENN ESTATES TESTING	36	01/01/2012	1/1/2015	40,020	(40,020)	-	-	-	-	-	-	-
26	*Water*	*1012841*	SUPP 12967 INV 175334	36	08/11/2020	8/11/2023	48	(7)	42	-	(16)	26	-	(16)	9
27	*Water*	*1012840*	SUPP 12967 INV 176715	36	10/15/2020	10/15/2023	0	(0)	0	-	(0)	0	-	(0)	0
28	*Water*	*1012842*	SUPP 12967 INV 176715	36	10/15/2020	10/15/2023	66	(5)	60	-	(22)	38	-	(22)	16
				TOTALS			40,134	(40,032)	102	-	(38)	64	-	(38)	26
29	***Def Chgs - Other***														
30	*Water*	1010889_G	PENN ESTATES METER NBV	120	1/31/2018	12/31/2027	86,029	(17,206)	68,823	-	(8,603)	60,221	-	(8,603)	51,618
31				**TOTALS**			86,029	(17,206)	68,823	-	(8,603)	60,221	-	(8,603)	51,618
32	***Def Chgs - Relocation***														
33	*Water*	*1012877*	DEFERRED CHARGE RELOCATION	24	08/15/2020	8/15/2022	193	(40)	153	-	(97)	56	-	(56)	0
34				**TOTALS**			193	(40)	153	-	(97)	56	-	(56)	0
35	*Proforma Deferred Assets*														
36	*Water*	319-2M	Multi-Year Testing	**36**	9/30/2021	12/31/2023	-	-	-	-	-	-	-	-	-
34				**TOTALS**			-	-	-	-	-	-	-	-	-
35			**Community Utilities of Pennsylvania Inc.**	**TOTALS**			353,858		245,109	-	(51,213)	193,896	-	(50,992)	142,904
							12/31/20	12/31/20	12/31/20	2021	2021	12/31/2021	2022	2022	12/31/2022
36							*Def Charges*	*Accumulated Amortization*	NBV	Additions	Amortization	NBV	Additions	Amortization	NBV
37	**Water**		**Community Utilities of Pennsylvania Inc.**	**TOTALS**			189,858		112,588	-	(18,413)	94,175	-	(18,192)	75,983
38	**Sewer**		**Community Utilities of Pennsylvania Inc.**	**TOTALS**			164,000		132,521	-	(32,800)	99,721	-	(32,800)	66,921

CUPA WW Exhibit No. PB-2R

CONFIDENTIAL

[REDACTED]

CUPA WW Exhibit No. PB-3R

CONFIDENTIAL

[REDACTED]

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

REBUTTAL TESTIMONY

OF

DAVID CLARK

EXPENSES AND RATE BASE

WASTEWATER DIVISION

SPONSORING CUPA WW EXHIBIT NO. DMC-1R AND DMC-2R

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Introduction

Q. ARE YOU THE SAME DAVID CLARK THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING ON JUNE 11, 2021 ON BEHALF OF COMMUNITY UTILITIES OF PENNSYLVANIA ("CUPA") OR ("THE COMPANY") WASTEWATER DIVISION?

A. Yes.

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF PENNSYLVANIA PUBLIC UTILITY COMMISSION'S BUREAU OF INVESTIGATION AND ENFORCEMENT ("I&E") AND THE OFFICE OF CONSUMER ADVOCATE ("OCA")?

A. Yes, I have.

Q. DO YOU HAVE ANY MATTERS THAT YOU WOULD LIKE TO ADDRESS IN REBUTTAL?

A. Yes. There are several items discussed in the testimony of OCA and I&E to which I would like to respond.

Community Utilities of Pennsylvania Rebuttal Position

Q. WHAT IS CUPA'S REBUTTAL REVENUE REQUIREMENT?

A. CUPA's total revenue requirement is $3,669,891 which is an increase of $994,453 to CUPA's present rate revenues of $2,675,438. This amount is also $4,252 less than the Company's filed incremental revenue increase. The adjusted incremental revenue decrease was calculated using O&M, taxes, and rate base adjustments included in this testimony. Please refer to the following table for a calculation of the Company's revenue requirement.

Community Utilities of Pennsylvania Inc.
Wastewater Division
Statement of Operating Income Setting Forth the Operating Revenues
FPFTY Ended December 31, 2022

Wastewater Operations

	Original Submission Ended 12/31/2022	Adjustments Ended 12/31/2022	Rebuttal Submissior Ended 12/31/2022
Operating Revenue			
Gross Operating Revenue	$ 3,671,042	$ (1,151)	$ 3,669,891
Allowance for Uncollectible Accounts	(26,650)	30	(26,620)
Net Operating Revenue	3,644,392	(1,120)	3,643,272
		-	-
Operating Expenses		-	-
		-	-
Operating Expenses	$ 1,805,715	$ 39,571	$ 1,845,286
Depreciation	665,056	-	665,056
Amortization of PAA	(58,573)	-	(58,573)
Taxes Other than Income	45,078	(49)	45,029
Amortization of CIAC	(86,762)	-	(86,762)
		-	-
Income Taxes		-	-
Federal Income Tax	$ 174,302	$ (5,509)	$ 168,793
State Income Tax	92,121	(2,912)	89,209
		$ -	$ -
Total Operating Expenses	$ 2,636,936	$ 31,101	$ 2,668,037
		-	-
Net Operating Income	$ 1,007,456	$ (32,222)	$ 975,234
		-	-
Non-Operating Income & Expenses		-	-
Interest Expense	351,748	(11,497)	340,252
Other Income	-	-	-
		-	-
Total Non-Operating Expenses	$ 351,748	$ (11,497)	$ 340,252
		-	-
Net Income (Loss)	$ 655,708	$ (20,725)	$ 634,983
Rate Base	$ 13,302,090		$ 12,867,313
Rate of Return	7.57%		7.58%

Q. PLEASE PROVIDE A SUMMARY OF CUPA'S ADJUSTMENTS INCLUDED IN THE COMPANY'S REBUTTAL POSITION.

A. Please see the following table for a summary of CUPA's adjustments. These adjustments will be discussed in detail throughout this testimony as well as the testimonies of Perry Brown and Steven Lubertozzi. Please refer to CUPA WW Exhibit No. DMC-1R Section 1 for the operating statement and rate base statement supporting the Company's claim.

WASTEWATER				
Rate Base Adjustment	**Original Proposed**	**I&E Adjustment**	**OCA Adjustment**	**Company Rebuttal Adjustment**
Adjustment to Remove Tamiment CWIP - Wastewater	439,920	-	-	(439,920)
Rate Case Expense - Wastewater	-	(140,084)		-
Working Capital - Wastewater	226,180	(17,088)	(12,248)	5,025
Plant Additions - Wastewater	5,539,427	(455,279)	(987,784)	-
O&M Adjustments				
Amortization of Tamiment CWIP Balance	-	-	-	39,993
Rate Case Expense - Wastewater	43,464	(8,443)		3,231
Purchased Power Expense - Wastewater	125,637			-
Chemical Expense - Wastewater	129,205	(56,547)	(70,266)	-
Materials, Supplies, and Other Maint - Wastewater	134,556	(32,800)	(30,409)	-
Engineering Expense - Wastewater	11,784		(3,620)	(2,126)
Testing, Meter Reading and Misc Expense - Wastewater	65,303		(18,551)	-
Salaries and Wages - Wastewater	469,108		(64,290)	(1,426)
Employee Pension and Benefits - Wastewater	132,598	(38,916)	(7,528)	(100)
Payroll Taxes - Wastewater	33,175		749	-
Uncollectible Accounts - Wastewater	(26,650)		2,427	30
Forfeited Discounts - Wastewater	7,335	2,751		3,713

Rate Base Adjustments

Q. PLEASE EXPLAIN OCA WITNESS SHERWOOD'S PROPOSED ADJUSTMENTS TO RATE BASE.

A. OCA witness Stacy Sherwood recommended a reduction to rate base of $987,784. OCA St. No. 1 (Wastewater) at 7-8. This amount was calculated by the removal of plant additions that do not have defined start or completion dates. The stated reason given for these removals is the "current economic climate" *Id.*

Q. DO YOU AGREE WITH WITNESS OCA SHERWOOD'S RECOMMENDATION OF PROPOSED ADJUSTMENTS TO RATE BASE?

A. No.

Q. PLEASE EXPLAIN WHY.

A. Witness Sherwood's basis for the rate base removals is not based on any specific statute or historical precedent, but more so on personal opinion. The level of capital spend reflected in her removals was proposed by the Company based on actual historical average spend

levels and is consistent with previous rate case submissions. Additionally, the removals would not be in the spirit of a FPFTY as the company has every intention of investing in this level of capital spending within the rate year.

Q. PLEASE EXPLAIN I&E WITNESS SAKAYA'S PROPOSED ADJUSTMENTS TO RATE BASE.

A. I&E witness Esyan Sakaya recommended a reduction to rate base of $455,279. OCA St. No. 3 (Wastewater) at 6-8. This amount was calculated by the removal of 2 amounts related to plant capital spend (and further adjusted to account for applicable retirements). The stated reason given for these removals is that the "Company's response lacks the details sufficient to justify inclusion" *Id.*

Q. DO YOU AGREE WITH WITNESS I&E SAKAYA'S RECOMMENDATION OF PROPOSED ADJUSTMENTS TO RATE BASE?

A. No.

Q. PLEASE EXPLAIN WHY.

A. Witness Sakaya's recommendation for the rate base removals is not based on any specific statute or historical precedent. The level of capital spend reflected in the removals was proposed by the Company based on actual historical average spend levels and is consistent with previous rate case submissions. There are not specific, defined "projects" for all capital spend, which is the reason there were not specific start/completion dates provided by the Company. Additionally, the removals would not be in the spirit of a FPFTY as the company has every intention of investing in this level of capital spending within the rate year.

Q. DO YOU AGREE WITH WITNESS I&E SAKAYA'S RECOMMENDATION THAT THE COMPANY PROVIDE ANNUAL UPDATES TO CUPA-WW SUPPORTING DATA, SECTION 1, PAGE 17 TO PROVIDE ACTUAL ADDITIONS AND RETIREMENTS FOR THE FTY AND FPFTY BY APRIL 1, 2022 AND APRIL 1, 2023?

A. Yes, the Company is willing to provide the requested updates.

Cash Working Capital

Q. WHAT IS CUPA'S ADJUSTED CLAIM FOR CASH WORKING CAPITAL ("CWC")?

A. The Company's claim should reflect $231,205 to include all operating and maintenance expense adjustments included in the Company's rebuttal position. The following table shows the calculation of CWC included in CUPA's rebuttal position.

12/31/22 Forecast			
Maintenance Expenses		$	1,054,466
General Expenses			790,820
Taxes Other Than Income			45,029
Reduction of Real Estates Taxes			(40,678)
Total		$	1,849,637
Working Capital	45/360	$	231,205

Engineering Expense

Q. PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ADJUSTMENT TO ENGINEERING EXPENSE.

A. OCA witness Sherwood reduced the Company's claim of $11,784 for the FPFTY by $3,620 OCA St. No. 1 (wastewater) at 11-12. The recommended allowance of $8,164 for

engineering expense was calculated by applying a 5-year normalization calculation to the expenses perceived not to be annual in nature and a 3-year normalization to annual expenses.

Q. DO YOU AGREE WITH SHERWOOD'S RECOMMENDATION TO NORMALIZE ENGINEERING EXPENSE?

A. No, I do not.

Q. PLEASE EXPLAIN WHY.

A. The nature of CUPA's claim is based on projected expenses. Witness Sherwood's calculations were made using historical amounts that are not representative of present and forward-looking amounts. In addition, the use of 3-year and 5-year historical averages does not accurately account for the mid-year 2019 acquisition of Tamiment. This type of backward-looking adjustment will not give CUPA a fair opportunity to recover costs in the year rates will be in effect and future forecasted costs under the fully projected future test year framework. These are costs which are prudent and reasonable to sustain CUPA's operations.

Q. WHAT IS CUPA CLAIM FOR ENGINEERING EXPENSE FOR THE FPFTY?

A. The Company does not agree with Sherwood's averaging calculation since it does not accurately account for the Tamiment acquisition. However, and without admission, the Company will not oppose an adjustment that uses a 2-year average of 2019 and 2020 for annual expenses in order to account for the acquisition. This calculation would net an adjustment reduction to engineering expense for the FPFTY of $2,126. This was calculated by averaging 2019 and 2020 annual expenses (($10,176+$12,844)/2) = $11,510 and then adding the 5-year average of $6,306 as calculated by witness Sherwood for non-annual

expenses. The resulting $17,816 was then multiplied by the Wastewater ERC allocation weight of 54.21%, which totals $9,658, this amount is then netted against the original claim of $11,784 producing the adjustment of $2,126.

<u>Purchased Power Expense</u>

Q. DOES THE COMPANY WISH TO ADDRESS WASTEWATER PURCHASED POWER EXPENSE BASED ON I&E WITNESS WALKER'S ALLOWANCE FOR PURCHASED POWER EXPENSE FOR WATER FOR FPFTY ENDING DECEMBER 31, 2022.

A. Yes. In I&E St. No 1 (water) at 7-10, witness Walker proposed a purchased power adjustment using a normalization of three historical periods (2018-2020). *Id.* The use of a historical average calculation is similar in approach to the Company's calculation methodology. As stated in my rebuttal testimony for Water, the Company assumes the same calculation methodology should be applied to the Wastewater purchased power expense as is applied to the Water purchased power expense in order to eliminate any expense fluctuations that are related to allocation factors between Water and Wastewater services.

Q. DOES THE USE OF I&E WITNESS WALKER'S CALCULATION METHODOLOGY TRIGGER ANY REQUIRED ADJUSTMENT TO WASTEWATER PURCHASED POWER EXPENSE AS PREVIOUSLY SUBMITTED?

A. Yes.

Q. PLEASE DETAIL THE ADJUSTMENT AMOUNT.

A. The adjustment amount is an increase to Wastewater Purchased Power Expense of $45,862. This is calculated by using the 2018 and 2019 historical annual totals, $157,276 and $169,214, respectively, which were then divided by the corresponding wastewater division ERC (3,143 and 3,721). The same calculation was performed for the HTY purchased power expense ($142,271), provided in the Company's filing, and corresponding ERC (3,897). The resulting historical expense per ERC values were then averaged (($50.04 + $45.48 + $36.51) ÷ 3) and multiplied by the current ERC count yielding an amount of $171,499 ($44.01 x 3,897). The difference of the $171,499 and the original submission of $125,637 leads to the adjustment amount of $45,862.

Q. DOES THE COMPANY PROPOSE THE INCLUSION OF THIS ADJUSTMENT AMOUNT FOR THE FPFTY?

A. Due to the factors mentioned above and in my Water testimony, the Company is proposing to stay with its original claimed submission for purchased power expense for Wastewater and Water.

Chemical Expense

Q. PLEASE EXPLAIN I&E WITNESS WALKER'S ALLOWANCE FOR CHEMICAL EXPENSE FOR FPFTY ENDING DECEMBER 31, 2022.

A. I&E witness Walker reduced the Company's claim of $129,205 for the FPFTY by $56,547. I&E St. No. 1 (wastewater) at 7-9. Walker's recommended allowance of $72,658 for chemical expense was calculated using normalization of three historical periods. *Id.* This approach looks backward instead of forward which is the intent of the

best ratemaking and the FPFTY approved by the General Assembly. Walker's reasoning for this reduction was based on backward view of the Company's costs in the past and unrepresentative years. *Id.*

Q. DO YOU AGREE WITH WITNESS WALKER'S RECOMMENDED ALLOWANCE FOR CHEMICAL EXPENSE?

A. No.

Q. PLEASE EXPLAIN WHY.

A. I&E witness Walker incorrectly referenced the Company's response for purchased power fluctuations as the basis for using a three-year average per ERC for the FPFTY chemical expense. CUPA has maintained its position that unit demand for each chemical is the driver for the Company's claim, and that normalization of historical data is not consistent with the purpose of a fully projected future test year. Included in response to I&E-RE-33 Part A was the development of CUPA's forecast by unit demand for each chemical type and unit cost for each chemical. CUPA's increased chemical costs for the FTY and FPFTY account for all known and measurable changes. These changes are inclusive of, but not limited to, additional requirements of $20k for AlCl3 at UIP in order to comply with our permit, as well as $12k for denitrifying chemicals, and additional requirements at Penn Estates of $22k for Stern Pac to manage phosphate contaminants and enable better sludge settling with the two-clarifier setup now fully in use. The goal of a FPFTY should be to accurately predict as well as possible, using operational or other drivers, what reasonable costs the utility will incur in the rate year and collect those costs from ratepayers in the rate year.

Q. PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ALLOWANCE FOR CHEMICALS EXPENSE FOR FPFTY ENDING DECEMBER 31, 2022.

A. Sherwood reduced the Company's claim of $129,205 for the FPFTY by $70,266. OCA St. No. 1 (wastewater) at 10-11. Like I&E Witness Walker, the recommended allowance of $58,939 for chemicals was calculated using a normalization of three historical periods. *Id.* Sherwood's reasoning for the chemical reduction was based on historical fluctuations in chemicals expense and was calculated using incorrect HTY totals *Id*.

Q. DO YOU AGREE WITH SHERWOOD'S RECOMMENDED ALLOWANCE FOR CHEMICAL EXPENSE?

A. No. I do not.

Q. PLEASE EXPLAIN WHY.

A. The Company does not believe normalization of historical data is consistent with the purpose of a fully forecasted rate year. Further, Sherwood disregards any increase that could be associated to cost inflation from historical periods. Finally, the provided calculation of the 3-year average is incorrect as the 2020 (HTY) expense of $168,183 as provided by the Company in Schedule 1-12 and the response to Data Request "OCA-Sherwood Set II-8 Chemical Expense HTY" was not used for the calculation. Instead, an incorrect amount of $50,660 was pulled from a response to a Data Request that was related to forecasted 2021 and 2022 expense that did not include the full 2020 year's expense. Using the correct HTY expense, invalidates her position of ignoring the Tamiment acquisition in the calculations due to the incorrect statement of "despite the addition of Tamiment, the purchase of chemicals in the HTY (2020) was lower than in 2019".

Q. WHAT IS CUPA'S PROPOSED CLAIM FOR CHEMICALS EXPENSE?

A. It remains the original filed claim of $129,205 for the FPFTY chemical expense.

Materials, Supplies, and Other Maintenance Expense

PLEASE EXPLAIN OCA WITNESS SHERWOOD'S RECOMMENDATIONS FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE FOR THE FPFTY ENDING DECEMBER 31, 2022.

A. OCA witness Sherwood is recommending a potential reduction of $30,409 to sludge hauling due to a possible or alleged double counting.

Q. WOULD THE COMPANY LIKE TO EXPLAIN AND PROVIDE SUPPORT TO CONFIRM THE CLAIMED EXPENSE AMOUNT OF $251,500?

A. Yes.

Q. PLEASE EXPLAIN.

A. As presented in CUPA WW Exhibit DMC-2 in WP-DC-04 (Materials, Supplies, and Other Maintenance Expense), the total expense items for the FPFTY are listed out to tie back to the $251,500 total claim. There was an inclusion of $30,409 for additional sludge hauling expense above the $226,788 amount shown in Schedule 1-12. While this was an intentional, legitimate adjustment amount that was calculated based on a 3-year average expense, it would have been better represented in the sludge hauling expense line on Schedule 1-12 instead of materials, supplies, and other maintenance expense line. The inclusion of $30,409 of sludge hauling in the "Materials, Supplies, and Other Maintenance Expense" line was inadvertent, and the Company is confirming that the correct sludge hauling expense is $257,197 (with $30,409 of the expense being included

in materials, supplies, other maintenance expense and $226,788 of the expense being reflected in sludge hauling expense line on schedule 1-12).

Q. DOES THE COMPANY AGREE THAT EXPENSE SHOULD BE REDUCED BY $30,409?

A. No. Based off the above explanation, the $30,409 is legitimate sludge hauling expense that has not been double counted.

Q. **PLEASE EXPLAIN I&E WITNESS WALKER'S RECOMMENDATIONS FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE FOR THE FPFTY ENDING DECEMBER 31, 2022.**

A. I&E witness Walker reduced the Company's claim of $134,556 for the FPFTY by $32,800. I&E St. No. 1 (wastewater) at 10-11. The recommended allowance of $101,756 for materials, supplies and other maintenance expense was calculated by removing deferred maintenance expense. *Id.* Walker claims that routine operating expenses are not appropriately subjected to deferral treatment, representing an out of period expense and that the Company should not be granted permission to recover prior period routine operating expenses. *Id.*

Q. DO YOU AGREE WITH WALKER'S RECOMMENDATION TO REMOVE DEFERRED MAINTENANCE EXPENSES FROM MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSES?

A. No, I do not.

Q. PLEASE EXPLAIN WHY.

A. Deferred maintenance expenses are known and measurable expenses required to provide service to customers. Although these expenses do not recur annually, their benefit is recognized over multiple years; and therefore, the related expense is most accurately recognized equally over the length of their life. This is the method that these expenses were calculated for this rate case, as well as how they have been calculated in previous cases. The disallowance of these expenses does not allow the utility the opportunity to recover the costs of prudent expenses often required by local and federal agencies.

Testing, Meter Reading, and Miscellaneous Expense

Q. PLEASE EXPLAIN OCA WITNESS SHERWOOD'S ALLOWANCE FOR TESTING, METER READING, AND MISCELLANEOUS EXPENSE FOR FPFTY ENDING DECEMBER 31, 2022.

A. OCA witness Sherwood decreased the Company's claim of $65,303 for the FPFTY by $18,551. OCA St. No. 1 (water) at 12-13. Sherwood's recommended allowance of $46,752 for testing, meter reading, and miscellaneous expense was calculated using normalization of three historical periods. *Id.*

Q. DOES THE COMPANY AGREE WITH WITNESS SHERWOOD'S RECOMMENDED ADJUSTMENT?

A. No. As previously stated, this is a backward-looking approach, which will not allow the utility to recover its costs and is inconsistent with General Assembly's future test year concept. Sherwood's reasoning for the adjustment was based on backward view of the Company's costs in the past and unrepresentative years. *Id.* In addition, the 3-year historical normalization calculation is not accurate as it does not account for or make any

adjustment for the periods prior to the Tamiment acquisition and is therefore an inaccurate portrayal of future expense.

Additional Sponsored Exhibits

Q. PLEASE EXPLAIN ANY ADDITIONAL EXHIBITS THAT ARE BEING SPONSORED.

A. In support of the Company's position related to the consolidation of rates for the Tamiment system as discussed in the testimony of Andrew Dickson and for comparison purposes, please refer to CUPA WW Exhibit No. DMC-2R which is a Tamiment Wastewater standalone operating statement and revenue requirement.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

CUPA WW Exhibit No. DMC-1R

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Statement of Net Operating Income Under the Existing and Proposed Rates for the Base Year Ended
December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and the FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 1a

Wastewater Operations	Schedule Number	Per Books Base Year Ended 12/31/2020	Change	Future Test Year Ended 12/31/2021	Change	Future Test Year Ended 12/31/2022	Change	Proposed FPFTY Ended 12/31/2022
Operating Revenue								
Gross Operating Revenue	(b)(2)	$ 2,592,130	$ 80,489	$ 2,672,619	$ 2,820	$ 2,675,439	$ 994,453	$ 3,669,891
Allowance for Uncollectible Accounts	Sup. Sch. No.3	(89,826)	70,442	(19,384)	-	(19,384)	(7,235)	(26,620)
Net Operating Revenue		2,502,304	150,931	2,653,235	2,820	2,656,054	987,218	3,643,272
Operating Expenses								
Operating Expenses	(c)(1) - Sheet No. 1b	$ 1,744,132	$ 16,736	$ 1,760,868	$ 84,418	$ 1,845,286	$ -	$ 1,845,286
Depreciation	Sup. Sch. No. 4	428,887	152,618	581,505	83,551	665,056	-	665,056
Amortization of CIAC	Sup. Sch. No. 4	(80,024)	(6,738)	(86,762)	-	(86,762)	-	(86,762)
Amortization of PAA	Sup. Sch. No. 4	(51,308)	(7,265)	(58,573)	-	(58,573)	-	(58,573)
Taxes Other than Income	Sup. Sch. No. 5	64,214	26,713	90,927	(52,482)	38,445	6,584	45,029
Income Taxes								
Federal Income Tax	Sup. Sch. No. 6	$ 8,785	$ 5,774	$ 14,559	$ (31,126)	$ (16,567)	$ 185,360	$ 168,793
State Income Tax	Sup. Sch. No. 6	787	6,907	7,694	(16,451)	(8,756)	97,965	89,209
Total Operating Expenses		2,115,473	194,745	2,310,218	67,910	2,378,128	289,910	2,668,037
Net Operating Income		$ 386,831	$ (43,814)	$ 343,017	$ (65,090)	$ 277,926	$ 697,308	$ 975,234

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Statement of the Calculation of the Rate of Return Under the Present and Proposed Rates for the Base Year Ended December 31, 2020, the Future Test Years Ended December 31, 2021 and December 31, 2022, and FPFTY Ended December 31, 2022
Answer to 52 Pa. Code 53.52 (c)(1) - Sheet No. 2

Wastewater Operations	Supporting Schedule No.	Pro-forma Present 12/31/2020	Future Test Year 12/31/2021	Future Test Year 12/31/2022	Proposed FPFTY 12/31/2022
Utility Plant In Service	(c)(3)	$ 21,800,965	$ 21,800,965	$ 21,361,044	$ 21,361,044
Less:					
Accumulated Depreciation	(c)(4)	(9,209,332)	(9,790,837)	(10,455,892)	(10,455,892)
Net Plant In Service		12,591,633	12,010,128	10,905,152	10,905,152
Less:					
Contributions in Aid of Construction (Net)		(1,948,583)	(1,861,821)	(1,775,060)	(1,775,060)
Net Plant Acquisition Adjustment		(1,174,754)	(1,116,181)	(1,057,608)	(1,057,608)
Customer Deposits		(1,100)	(1,707)	(1,707)	(1,707)
Accumulated Deferred Income Taxes		(734,226)	(750,321)	(774,535)	(774,535)
Add:					
Proforma Level of Plant		-	2,294,002	5,272,944	5,272,944
Deferred Charges		105,639	99,721	66,921	66,921
Cash Working Capital	11	221,881	226,874	231,205	231,205
Total Rate Base		$ 9,060,490	$ 10,900,695	$ 12,867,313	$ 12,867,313
Net Operating Income	(c)(1) Sheet 1a	386,831	343,017	277,926	975,234
Percent Pro-forma Return		4.27% [1]	3.15% [1]	2.16% [1]	7.58% [1]

[1] Net Operating Income over Total Rate Base.

CUPA WW Exhibit No. DMC-2R

Community Utilities of Pennsylvania Inc.
Sewer Operations
Future Test Year Ended December 31, 2022

	A	B	C	D	E	F	G	H	I
Line No.		12/31/2020 Per Books	Change	12/31/2021 Forecast	Change	12/31/2022 Forecast	12/31/2022 Future Test Year	Proposed Increase	Pro Forma Proposed
1	Operating Revenues								
2	Service Revenues - Water	$ -		$ -		$ -	$ -		
3	Service Revenues - Sewer	361,197	53,381 [a]	414,578	- [a]	414,578	414,578	409,075 [m]	823,653
4	Purchased Water Surcharge	-		-	-	-	-	-	-
5	Purchased Sewer Surcharge	-	-	-	-	-	-	-	-
6	Miscellaneous Revenues	3,707	(2,467) [k]	1,240	-	1,240	1,240	-	1,240
7	Uncollectible Accounts	(40,705)	37,689 [b]	(3,016)	- [d]	(3,016)	(3,016)	(2,976) [b]	(5,604)
8									
9	Total Operating Revenues	$ 324,199	$ 88,603	$ 412,802	$ -	$ 412,802	$ 412,802	$ 406,099	$ 819,289
10									
11	Maintenance Expenses								
12	Salaries and Wages	$ 71,440	$ (19,530)	$ 51,910	$ 2,567	54,477	$ 54,477	$ -	$ 54,477
13	Purchased Power	35,078	(4,410)	30,668	613	31,281	31,281	-	31,281
14	Purchased Sewer	-	-	-	-	-	-	-	-
15	Maintenance and Repair	80,654	(23,754)	56,900	(1,061) [l]	55,839	55,839	-	55,839
16	Maintenance Testing	9,660	9,101	18,761	619	19,380	19,380	-	19,380
17	Meter Reading	-	-	-	-	-	-	-	-
18	Chemicals	12,770	3,442	16,212	-	16,212	16,212	-	16,212
19	Transportation	4,131	(291)	3,840	(18)	3,822	3,822	-	3,822
20	Operating Exp. Charged to Plant	(2,660)	(4,908)	(7,568)	365	(7,203)	(7,203)	-	(7,203)
21	Outside Services - Other	17,786	(8,662)	9,124	(1,831)	7,293	7,293	-	7,293
22									
23	Total	$ 228,859	$ (49,013) [c]	$ 179,846	$ 1,253 [d]	$ 181,099	$ 181,099	$ -	$ 181,099
24									
25	General Expenses								
26	Salaries and Wages	$ 7,414	$ 17,021 [k]	$ 24,435	$ 932 [k]	25,368	$ 25,368	$ -	$ 25,368
27	Office Supplies & Other Office Exp.	3,855	250	4,104	35	4,139	4,139	-	4,139
28	Regulatory Commission Exp.	4,456	1,621	6,078	- [e]	6,078	6,078	-	6,078
29	Pension & Other Benefits	13,132	6,086	19,218	1,314	20,533	20,533	-	20,533
30	Rent	434	(326)	109	(109)	-	-	-	-
31	Insurance	5,590	2,094	7,684	934	8,618	8,618	-	8,618
32	Office Utilities	10,166	(3,580)	6,586	271	6,857	6,857	-	6,857
33	Miscellaneous	1,693	(44)	1,649	358	2,007	2,007	-	2,007
34	Corporate Allocation	59,104	(14,893)	44,211	1,649 [g]	45,861	45,861	-	45,861
35									
36	Total	$ 105,845	$ 8,230 [c]	$ 114,075	$ 5,386 [d]	$ 119,461	$ 119,461	$ -	$ 119,461
37									
38	Depreciation	$ 64,876	$ (35,774) [f]	$ 29,101	$ 358 [f]	$ 29,459	$ 29,459	$ -	$ 29,459
39	Amortization of PAA	-	-	-	-	-	-	-	-
40	Taxes Other Than Income	31,705	8,533 [c]	40,238	(19,339) [d]	20,556	20,556	3,212	23,768
41	Income Taxes - Federal	-	(8,119) [h]	(8,119)	(5,618) [h]	(23,688)	(23,688) [h]	90,439 [h]	66,750
42	Income Taxes - State	-	(4,291) [h]	(4,291)	(2,969) [h]	(12,520)	(12,520) [h]	47,798 [h]	35,278
43	Amortization of ITC	-	-	-	-	-	-	-	-
44	Amortization of CIAC	-	- [f]	-	- [f]	-	-	-	-
45									
46	Total	$ 96,581	$ (39,651)	$ 56,929	$ (27,568)	$ 13,807	$ 13,807	$ 141,449	$ 155,255
47									
48	Total Operating Expenses	$ 431,284	$ (80,434)	$ 350,850	$ (20,929)	$ 314,367	$ 314,367	$ 141,449	$ 455,816
49									
50	Net Operating Income	$ (107,085)	$ 169,037	$ 61,952	$ 20,929	$ 98,823	$ 98,823	$ 264,650	$ 363,474
51									
52	Other Income	$ 7,064	$ -	$ -	$ -	$ -	$ -	$ -	$ -
53	Interest During Construction	(19,753)	19,753 [i]	-	-	-	-	-	-
54	Interest on Debt	57,399	35,095 [j]	92,495	42,062 [j]	134,556	134,556	-	134,556
55									
56	Net Income	$ (151,795)	$ 114,189	$ (30,543)	$ (21,134)	$ (35,733)	$ (35,733)	$ 264,650	$ 228,918

CUPA WW STATEMENT NO. 4-R
August 27, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206

REBUTTAL TESTIMONY

OF

ANDREW DICKSON

SEWER RATE DESIGN

SPONSORING CUPA WW REBUTTAL EXHIBIT NO. AWD-1R

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025206

Rebuttal Testimony of Andrew Dickson

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.**

A: My name is Andrew Dickson. I am a Senior Financial Analyst for Corix Regulated Utilities (US) Inc. ("CRUI"), formerly known as Utilities, Inc.[1] which changed its name to CRUI and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of UI. My business address is 500 W Monroe Street, Suite 3600, Chicago, IL 60661.

Q: **ARE YOU THE SAME ANDREW DICKSON WHO SPONSORED DIRECT TESTIMONY IN THIS PROCEEDING?**

A: Yes.

Q: **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A: The purpose of my testimony is to respond to certain issues discussed in the direct testimony of I&E witness Mr. Esyan Sakaya (I&E Statement No. 3). I also respond to certain issues raised in the direct testimony of OCA witness Mr. Jerome Mierzwa (OCA Statement No. 3) and OSBA witness Mr. Brian Kalcic (OSBA Statement No. 1). Namely,

[1] Utilities, Inc. changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

I will address the proposed consolidation of rates for Tamiment and the reasonableness of CUPA's proposed rates.

Q: **ARE THERE ANY ATTACHMENTS TO YOUR REBUTTAL TESTIMONY?**

A: Yes.

Q: **PLEASE DESCRIBE THE CONTENTS OF CUPA WW REBUTTAL EXHIBIT NO. AWD-1R.**

A: CUPA WW Rebuttal Exhibit AWD-1R details an improved billing unit and usage forecast for CUPA for 2022, which CUPA is not proposing to employ in this case due to the resulting rates applying greater pressure on CUPA customers.

CONSOLIDATION OF RATES FOR TAMIMENT

Q: **DO ANY WITNESSES ADDRESS THE CONSOLIDATION OF RATES FOR TAMIMENT AND CUPA?**

A: Yes. I&E witness Mr. Esyan Sakaya agrees to CUPA's consolidation of rates for Tamiment and CUPA (I&E Statement No. 3 at 16). Mr. Kalcic agrees with CUPA's overall design approach for sewer rates (OSBA Statement No. 1 at 15). However, Mr. Kalcic suggests only partial consolidation of Tamiment into CUPA's rates, as he understands full consolidation to lead to marginally higher rate impacts for CUPA customers than they would experience without Tamiment. He subsequently recommends a slower rate of change to Tamiment customer rates (75% of the overall system average increase) to gradually bring Tamiment bills down in relation to their CUPA counterparts. Mr. Mierzwa

rejects CUPA's consolidation of rates, claiming there is no basis for CUPA's proposal to consolidate rates under CUPA's existing rate design (OCA Statement No. 3 at 12).

Q: **DOES CUPA HAVE COMMENTARY SURROUNDING MR. KALCIC'S RATE RECOMMENDATIONS SURROUNDING PARTIAL CONSOLIDATION?**

A: Yes. CUPA has proposed full consolidation to get all customers paying their fair share for sewer service. To my understanding, Mr. Kalcic's suggestion stems from concern for the impact on non-Tamiment customers of consolidating Tamiment with CUPA. Mr. Kalcic does not provide evidence that the impact on non-Tamiment customers is significant enough to warrant such complications of CUPA's tariff (i.e. maintaining separate rates for Tamiment customers). Tamiment is a relatively small portion of CUPA, with less than 15% of CUPA's non-availability customers located in Tamiment, so the impact on non-Tamiment customers will be significantly diminished, relative to any benefit that Tamiment customers experience.

Q: **HOW DO YOU RESPOND TO MR. MIERZWA'S POSITION THAT CONSOLIDATION OF RATES AS PROPOSED BY CUPA HAS NO BASIS?**

A: CUPA disagrees with Mr. Mierzwa. CUPA's proposal is based on the goal of producing an easily understood, consistent, single tariff for all of its wastewater customers. Rate design goals of intelligibility and consistency are common rate design goals, and are implied by Mr. Mierzwa's own citations in OCA Statement No. 3 page 7, "A sound rate design should…[p]rovide simplicity, certainty, convenience of payment, understandability, public acceptability, and feasibility of application, and reflect fairness in the apportionment of the total cost of service among the various customer classes".

Single tariff pricing eliminates significant confusion that is caused by having separate tariffs for geographic groups of customers within a single utility, as is the status quo for CUPA and its separate Tamiment rates. This comes with the administrative burden not only of applying different rates for different customers, but also fielding customer concerns and complaints related to misunderstandings of the more complex tariff. Further, consolidation of rates ensures fairness in application across all utility customers, so residential customers in Penn Estates, for example, do not experience different rates for similar service provided in Tamiment.

It is CUPA's understanding that Mr. Mierzwa's chief complaints regarding consolidation of Tamiment into CUPA's rate structure are the bill impact that the change will have on Tamiment customers and the philosophical move away from volumetric sewer rates. As discussed throughout testimony, CUPA does not share the same beliefs surrounding gradualism for Tamiment customers; they have experienced the lack of any rate changes for over 10 years, and must be brought current to rates that reflect their cost to serve, and CUPA customers should not be asked to subsidize Tamiment customers as a result. And regarding volumetric rates, CUPA understands Mr. Mierzwa's argument to be largely focused on commission policy. However, flat rates are common for sewer utilities and are generally effective in producing consistent, affordable rates for customers. CUPA's goal in proposing incorporation of Tamiment into its existing sewer rate design is not to eliminate volumetric rates – this is a byproduct. Instead, CUPA's goal is to produce a rate design that is consistent with what the vast majority of CUPA's sewer customers are used to seeing, that recovers CUPA's revenue requirement, and that prevents subsidization of Tamiment customers. CUPA is willing to consider volumetric rates in future cases, but

its cost of service study, which Mr. Mierzwa agrees to be reasonable (OCA Statement No. 3 at 11), does not assign costs to customer classes based on flow estimations (CUPA WW Exhibit SAM-1), which would be a prerequisite to produce a volumetric rate design based on class costs.

Q: **HOW DO YOU RESPOND TO MR. KALCIC'S AND MR. MIERZWA'S RECOMMENDATIONS FOR PARTIAL CONSOLIDATION OF TAMIMENT'S RATES?**

A: CUPA rejects these recommendations. Partial consolidation leaves subsidies in place or even creates them (as is the case for CUPA, where Tamiment's rates were developed in isolation of CUPA's rates by the previous owner of Tamiment), and generates unnecessary confusion surrounding the cost foundations for various rates and questions about when full consolidation will be achieved (if at all). CUPA's customers outside of Tamiment should not be asked to support a gradual change in rates for Tamiment customers. Tamiment's customers' rates will change largely due to the lengthy period of time since their last rate change, instead of any unique demand characteristics. In the absence of consolidation, Tamiment customers should pay for their cost to serve – CUPA WW Exhibit DC-2 identifies a 104% is necessary to bring Tamiment customers current with their revenue requirement, if isolated from the rest of CUPA.

RATE DESIGN

Q: **DO ANY WITNESSES ADDRESS THE DESIGN OF CUPA'S PROPOSED RATES?**

A: Yes. Mr. Sakaya objects to CUPA's proposed availability rate for Tamiment customers, positing that it violates the concept of gradualism, and makes adjustments to all other sewer rates to recover CUPA's sewer revenue requirement.

Mr. Kalcic suggests partial consolidation, as discussed above, and subsequently recommends a partial movement towards consolidation for Tamiment customers.

Mr. Mierzwa suggests that gradualism must be applied to rate changes for Tamiment customers, and makes subsequent recommendations that leverage Tamiment's existing rate design as the foundation for proposed rates. Mr. Mierzwa recommends adding a low-income rate to CUPA's regular tariff (those applied to non-Tamiment customers) that mirrors the design of the water low-income rate.

Q: **DOES CUPA ACCEPT MR. SAKAYA'S PROPOSED SEWER RATES?**

A: No. Mr. Sakaya does make appropriate adjustments to rates for his availability rate recommendation. However, CUPA does not agree with Mr. Sakaya's position that CUPA's proposed availability rate is too high. CUPA has designed its availability rate using the same units on which costs are allocated in its cost of service study. As a result, CUPA's availability charge is cost based. Any reduction in the availability rate results in a subsidy that benefits CUPA's availability customers at the expense of CUPA's other customers. Mr. Sakaya's assertion that CUPA's proposed availability charge violates the concept of gradualism does not fully consider the length of time that Tamiment availability

customers have gone without a rate change (over 10 years). Further, Mr. Sakaya's suggestion decreases the availability charge for CUPA's availability customers outside of Tamiment, which eliminates CUPA's ability to prevent subsidization of these customers. Overall, this is a generally inconsequential issue (in that it does not significantly impact rates for most customers), but it is CUPA's position that, to the extent possible, customers should pay rates that best reflect how those customers impose costs on CUPA's sewer system.

Q: **DOES CUPA ACCEPT MR. KALCIC'S PROPOSED SEWER RATES?**

A: No. Mr. Kalcic's suggestion of partial consolidation is inconsistent with the philosophies behind CUPA's proposal to consolidate, as discussed above. Further, Mr. Kalcic does not demonstrate significant improvements for customers as an outcome of his 75% of system average increase (OSBA Statement No. 1 at 15).

Q: **DOES CUPA ACCEPT MR. MIERZWA'S PROPOSAL TO MAINTAIN A SEPARATE TARIFF FOR TAMIMENT CUSTOMERS?**

A: No. Mr. Mierzwa argues that "[t]here is no basis for the Company's proposal. Under flat rates customers are not billed for their actual use of CUPA's wastewater system and, therefore, flat rates are inconsistent with cost of service principles" (OCA Statement 3 page 12). This is not true – flat rates for sewer service are frequently employed by sewer utilities, and their design is frequently based on cost of service studies. My understanding of Mr. Mierzwa's actual point is that flat rates would separate the relationship between level of service demanded (i.e. volume of sewage) from the price paid by a customer in a given billing period. To some extent, this is true; CUPA's rate structure, as proposed, will not

vary with volumes for Tamiment customers. However, the incremental benefit to customers is outweighed by the administrative cost of maintaining and applying separate tariffs, including fielding calls and complaints stemming from misunderstandings of a tariff with this additional complication of geographic-specific rates. CUPA's cost of service study, as identified as reasonable by Mr. Mierzwa (OCA Statement No. 3 at 11), does not allocate costs to customer classes based on volumes. The rates produced in CUPA WW Exhibit SAM-1 use a share of allocable equivalent meters (16.16%) to identify a share of treatment and disposal costs to assign to Tamiment customers, but it is not necessary to allocate this cost to classes as residential and commercial customers are treated equivalently. The major disadvantage of this methodology is it assumes that customers use water in direct proportion to their allocable meters (which, for residential and commercial customers, are all 1.0). Therefore, it leverages Tamiment's flow data as descriptive of all of CUPA, which is not likely an accurate representation of CUPA; Tamiment composes less than one-fifth of all of CUPA by customer count alone. Mr. Mierzwa's suggestion is thus to create a rate design alteration based on a small subset of CUPA, which is a more sincere violation of cost of service principles; it designs rates on information that is based on undescriptive usage information and imposes the outcomes on customers whom would otherwise experience consistent, easily-understood rates. It makes more sense for both customers and for CUPA to incorporate Tamiment into CUPA's rates, not vice versa, and

create a consistent foundation for consideration of volumetric sewer rates in future proceedings.

Q: **DOES CUPA ACCEPT MR. MIERZWA'S PROPOSAL TO INCORPORATE A LOW-INCOME RATE INTO ITS SEWER DESIGN?**

A: Not at this time. CUPA's cost of service study does not distinguish between customers based on demand characteristics like extra strengths (i.e., TN, P, TKN, FOG, etc.), flows, or meter sizes. As an outcome, CUPA's study treats commercial and residential customers equivalently, as reflected in CUPA WW Exhibit SAM-1 and in CUPA's resulting proposed rates. This is appropriate for a rate design that will not differentiate between residential and commercial customers, but the creation of a low-income rate only for eligible residential customers necessitates a separation of residential and commercial customers to prevent interclass subsidies. Mr. Mierzwa acknowledges this in his recommendation, recommending that revenue foregone from low-income customers be recovered from regular residential customers (OCA Statement No. 3 at 15). However, such a design lacks important feedback and price signaling mechanisms for low-income customers. There is no capping mechanism to discourage abnormal demands from low-income customers. Further, Mr. Mierzwa's suggestion to base the discount for low-income customers on that calculated for Tamiment customers is not based on costs; it imposes a relationship on CUPA customers from Tamiment's existing rates that is neither consistent nor reproducible from CUPA's cost of service study. These points are in addition to those already made by CUPA in response to OCA Set IV-5, as referenced by Mr. Mierzwa. CUPA's primary goal in its sewer rate design is to provide consistency to customers in their sewer rate design to

facilitate understanding of their bills under new rates, and to fully incorporate the Tamiment service territory into CUPA's existing rate design.

Q: **DOES CUPA ACCEPT MR. MIERZWA'S PROPOSAL FOR LIMITING THE CHANGE TO THE TAMIMENT AVAILABILITY CHARGE?**

A: No. Mr. Mierzwa appears to make another gradualism argument for limiting the change in Tamiment's rates (OCA Statement No. 3 page 13), based solely on his re-use of his ratio to the system average increase. As described in my water testimony, this ratio or figure is invalid due to its lack of consideration for the length of time that Tamiment has gone without a rate change, and further does not consider the underlying costs driving changes to individual customer bills. CUPA has based its availability rate design on the allocation methodology that Mr. Mierzwa has agreed is reasonable.

Q: **ARE THERE ANY OTHER TOPICS YOU WISH TO ADDRESS IN YOUR REBUTTAL TESTIMONY?**

A: Yes. In the process of preparing its rebuttal testimony, CUPA noticed that its billing units were overstated, particularly for the Tamiment area. A summary of billing units is presented in CUPA WW Rebuttal Exhibit AWD-1R, comparing those in this case and those that better represent CUPA.

CUPA is not proposing any change to its billing units – the impact of this would be steeper rate increases for its customers. CUPA understands the difficulty that rate increases can apply to household and commercial financial circumstances, and thus will not propose a correction to volumes and bill counts in this case.

Q: **DOES THIS CONCLUDE YOUR PREPARED REBUTTAL TESTIMONY?**

A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

CUPA WW Exhibit No. AWD-1R

Community Utilities of Pennsylvania Inc.
Wastewater Operations
Proforma Future Test Year
Future Test Year Ended December 31, 2022

	A	B	C	D	E	F	G	H	I	J	K	L
	SEWER											
Line	Bill code	Class		Description	Rate Case Gallonage	Corrected Gallonage	Change	% Change	Rate Case Units	Corrected Units	Change	% Change
1												
2	Consolidated:	RES		Unmetered-Household (Flat)					38,588	39,049		
3	Consolidated:	COML		Unmetered-School (Flat)					13,824	13,824		
4	Consolidated:	COML		Unmetered-Commercial (5/8")					66	72		
5	Consolidated:	COML		Unmetered-Commercial (1")					12	12		
6	Consolidated:	RES		Unmetered-Other Availability					588	561		
7	Tamiment:	RES		Metered-Residential (Flat)	22,201,133	16,849,180	(5,351,953)	-24.1%	6,519	6,023	(496)	-7.6%
8	Tamiment:	COML		Metered-Commercial (5/8")	220,500	214,413	(6,087)	-2.8%	24	36	12	50.0%
9	Tamiment:	COML		Metered-Commercial (6")	-	-	-		12	12	-	
10	Tamiment:	RES		Metered-Other Availability	-	-	-		3,936	3,276	(660)	
11												
12												
13					22,421,633	17,063,593	(5,358,040)	-23.9%	63,569	62,865	(705)	-1.1%
14												
15												
16		Sewer Total			22,421,633	17,063,593	(5,358,040)	-23.9%	63,569	62,865	(705)	-1.1%

CUPA WW Exhibit No. AWD-1R

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3025206 & R-2021-3025207

CUPA Statement No. 5-R

Rebuttal Testimony of

Dylan W. D'Ascendis, CRRA, CVA

on behalf of

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

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I. INTRODUCTION, PURPOSE, AND SUMMARY

Q. Please state your name and business address.

A. My name is Dylan W. D'Ascendis. I am a Partner at ScottMadden, Inc. My business address is 3000 Atrium Way, Suite 200, Mount Laurel, NJ 08054.

Q. On whose behalf are you testifying?

A. I am submitting this rebuttal testimony (referred to throughout as my "Rebuttal Testimony") before the Pennsylvania Public Utility Commission ("PA PUC" or the "Commission") on behalf of Community Utilities of Pennsylvania, Inc. ("CUPA" or the "Company").

Q. Are you the same Dylan W. D'Ascendis who provided Direct Testimony in this proceeding?

A. Yes, I am.

Q. What is the purpose of this Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is two-fold. First, given the passage of time since my analyses in my Direct Testimony (as of April 26, 2021), I have updated my return on common equity ("ROE") analysis to reflect current data. Second, my Rebuttal Testimony addresses certain aspects of the direct testimonies of Mr. Christopher Keller, witness for the PA PUC's Bureau of Investigation and Enforcement ("I&E") and Mr. Noah D. Eastman, witness for the Pennsylvania Office of Consumer Advocate ("OCA") (collectively referred to as the "Opposing Witnesses") as they pertain to CUPA's allowed ROE, which the Company should have the opportunity to earn on its authorized jurisdictional rate base.

Q. Please summarize your conclusions.

A. Based on market data as of August 13, 2021, I have calculated an updated range of reasonable ROEs attributable to CUPA between 9.17% and 12.42%, and I maintain my initial recommendation of 10.35%, which continues to be reasonable, if not conservative. In view of current markets and the updated results of my ROE models, ROEs of 9.24% (Keller) and 9.34% (Eastman) are insufficient.

Q. Do you have general comments regarding the Opposing Witnesses' recommended ROEs?

A. Yes, I do. The Opposing Witnesses' recommended ROEs are insufficient, in part, because of their exclusive reliance on their discounted cash flow ("DCF") model results for their recommendations. There is both academic and practical support for the use of multiple models in an ROE analysis, which will be explained in detail below.

Q. Have you prepared an exhibit which supports your Rebuttal Testimony?

A. Yes. It has been designated as CUPA Statement No. 5-R, which consists of Schedules DWD-1R through DWD-8R.

Q. How is the remainder of your Rebuttal Testimony organized?

A. The remainder of my Rebuttal Testimony is organized as follows:

- Section II – Provides my updated analyses;
- Section III – Discusses the undue weighting of DCF model results by the Opposing Witnesses;
- Section IV – Contains my response to Mr. Keller;
- Section V – Contains my response to Mr. Eastman; and
- Section VI – Summarizes my conclusions and recommendations.

Q. Please summarize the key issues and recommendations offered by the Opposing Witnesses that you address in your Rebuttal Testimony.

A. My Rebuttal Testimony responds to substantive recommendations offered by the Opposing Witnesses in their direct testimonies. I will address the following issues common to the Opposing Witnesses' direct testimonies:

- Their undue weighting of DCF model results in their ROE recommendations;
- Their application of the capital asset pricing model ("CAPM"); and
- Their failure to reflect the greater risk of the Company due to their smaller relative size to their proxy groups.

In addition to the errors common to both testimonies, I will address Mr. Keller's recommended ROE of 0.00% for CUPA's water operations.

In sum, these factors serve to bias the Opposing Witnesses' ROE recommendations downward. My Rebuttal Testimony addresses these factors in detail, as well as other issues specific to each witness, and addresses the unfounded critiques of my Direct Testimony by the Opposing Witnesses.

II. <u>UPDATED ANALYSIS</u>

Q. Have you updated your ROE analysis for your Rebuttal Testimony?

A. Yes, I have. Due to the passage of time since my Direct Testimony (data as of April 26, 2021), I have updated my analysis using market data as of August 13, 2021 which was not available, of course, at the time of filing Direct Testimony.

Q. Have you updated your Utility Proxy Group for your updated analyses?

A. Yes, I have. In updating my proxy group selection criteria using fiscal year 2020 data, Essential Utilities, Inc. no longer has 70% or greater total assets attributable to regulated water operations. As such, I have eliminated them from my updated Proxy Group.

Q. Have you applied any of your ROE models differently in your updated analyses?

A. No, I have not.

Q. What are the results of your updated analysis?

A. Using data available as of August 13th, 2021, my updated results are presented in page 2 of Schedule DWD-1R and in Table 1, below.

Table 1: Updated Cost of Common Equity Results

Discounted Cash Flow Model	8.17%
Risk Premium Model	11.09%
Capital Asset Pricing Model	11.14%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	11.42%
Indicated Range	8.17% - 11.42%
Size Adjustment	1.00%
Recommended Range	9.17% - 12.42%
Recommended Cost of Common Equity	10.35%

In view of the unadjusted and adjusted ranges of ROE, I maintain my original ROE recommendation of 10.35%. Upon reviewing my updated results, two items became apparent: 1) the indicated results of my ROE models have generally increased from my analyses presented in my Direct Testimony, which is

a directional indicator that the investor-required return has increased since my Direct Testimony, and 2) since my recommended ROE of 10.35% is in the bottom half of my range, it is a conservative measure of the Company's ROE at this time.

III. UNDUE WEIGHTING OF DCF MODEL RESULTS

Q. Do you have a general comment regarding the Opposing Witnesses' recommended ROEs for the Companies?

A. Yes, the Opposing Witnesses' recommended ROEs of 9.24% (Keller) and 9.34% (Eastman) are inadequate, in part, because they place undue weight on their DCF model results, which tend to mis-specify the investor-required return when market-to-book ("M/B") ratios are not at unity (*i.e.,* 1.0).

Q. To what extent do the Opposing Witnesses' recommended ROEs rely on their DCF models?

A. As previously stated, the Opposing Witnesses rely exclusively on their DCF model results for their recommendations regarding the cost of common equity for the Company. As discussed in my Direct Testimony,[1] the use of multiple models adds reliability to the estimation of the common equity cost rate, with the prudence of using multiple cost of common equity models supported in both the financial literature and regulatory precedent.

Q. Are there examples from the financial literature which support the use of multiple cost of common equity models in determining the investor-required return?

A. Yes. In one example, Morin states:

1 D'Ascendis Direct Testimony, at 38.

Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. The inability of the DCF model to account for changes in relative market valuation, discussed below, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. Similarly, the inability of the CAPM to account for variables that affect security returns other than beta tarnishes its use.

No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data. (emphasis added)

* * *

The financial literature supports the use of multiple methods. Professor Eugene Brigham, a widely respected scholar and finance academician, asserts(footnote omitted):

> Three methods typically are used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) method, and (3) the bond-yield-plus-risk-premium approach. **These methods are not mutually exclusive – no method dominates the others**, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand. (emphasis added)

Another prominent finance scholar, Professor Stewart Myers, in an early pioneering article on regulatory finance, stated(footnote omitted):

> Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, **only a fool throws away useful information**. That means you should not use any one model or measure mechanically and exclusively. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data. (emphasis added)

> Reliance on multiple tests recognizes that no single methodology produces a precise definitive estimate of the cost of equity. As stated in Bonbright, Danielsen, and Kamerschen (1988), '*no single or group test or technique is conclusive*.' Only a fool discards relevant evidence. (italics in original) (emphasis added)
>
> * * *
>
> **While it is certainly appropriate to use the DCF methodology to estimate the cost of equity, there is no proof that the DCF produces a more accurate estimate of the cost of equity than other methodologies**. Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. **The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity.** It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings in contrast to its virtual disappearance in academic textbooks does not make it superior to other methods. The same is true of the Risk Premium and CAPM methodologies. (emphasis added) [2]

Finally, Brigham and Gapenski note:

> In practical work, *it is often best to use all three methods* – CAPM, bond yield plus risk premium, and DCF – and then apply judgment when the methods produce different results. People experienced in estimating equity capital costs recognize that both careful analysis and some very fine judgments are required. It would be nice to pretend that these judgments are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. Finance is in large part a matter of judgment, and we simply must face this fact. (italics in original) [3]

In the academic literature cited above, three methods are consistently mentioned: the DCF, CAPM, and the Risk Premium Model ("RPM"), all of which I used in my analyses.

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2 Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 428-431. ("Morin")

3 Eugene F. Brigham and Louis C. Gapenski, Financial Management – Theory and Practice, 4th Ed. (The Dryden Press, 1985) at 256.

Q. Are there specific examples where the PA PUC has considered multiple cost of common equity models?

A. Yes. The Commission, in Docket No. R-2013-2360798, concerning Columbia Water Company ("Columbia"), where I was Columbia's ROE witness, stated:

> Based on our review of the testimony, data, and cost models presented, we believe that the evidence in this case supports an ROE finding in the reasonable range of 9.25% to 10.25% using the DCF method as the foundation. The equity-heavy capital structure of Columba indicates that a slightly lower ROE is appropriate. However, the small size of the Company, its management effectiveness, and the results of other ROE models other than the DCF are all reasons to set a higher ROE. Therefore, within our indicated range of reasonableness, we conclude that an ROE of 9.75% is appropriate for our ratemaking determinations herein.

Also, in Docket No. R-2014-2402324 concerning Emporium Water Company ("Emporium"), where I was Emporium's ROE witness, the Commission stated the following:

> The ALJ recommended that the Commission adopt the Company's proposed return on common equity of 11.05%.[Footnote Omitted] R.D. at 11. The ALJ explained that the Company's position allows it to pay its debt service, which includes principal payments and interest, and provides a modest return on equity ($34,000). The ALJ states that I&E's and the OCA's positions fail to meet the standards set by the *Hope* and *Bluefield* by not even allowing the Company to pay their debt service, which may lead to possible default on the loans and the bankruptcy of the Company. R.D. at 35.
>
> * * *
>
> As discussed, *supra*, the OCA recommends a return of 9.10% as the midpoint of its DCF and CE analyses; I&E recommends a return of 8.89% based on its DCF analyses; and the Company proposes a return of 10.3%, which utilizes its DCF, RP, and CAPM analyses to which the Company adds a size risk adjustment of 75 basis points. Based on our review of the testimony, data, and cost models presented, and considering our adoption of a 60% / 40% hypothetical capital structure, we believe that the range of returns provided in evidence supports an ROE finding of 10.0% for our ratemaking determinations herein.

In the Commission Orders cited above, there is clear language that the Commission considers multiple models in its determination of ROE. It is also my interpretation of these Orders that the Commission correctly observes capital market conditions and their effect on the model results in determining an ROE for utility companies. This, in addition to the academic literature cited above, shows that the Opposing Witnesses' reasoning behind relying solely on the DCF for their recommended ROEs is misplaced.

Q. In addition to the above, why is primary reliance on the DCF model generally problematic?

A. Traditional rate base / rate of return regulation, where a market-based common equity cost rate is applied to a book value rate base, presumes that the M/B ratios are at unity or 1.00. However, that is rarely the case. Morin states:

> The third and perhaps most important reason for caution and skepticism is that application of the DCF model produces estimates of common equity cost that are consistent with investors' expected return only when stock price and book value are reasonably similar, that is, when the M/B is close to unity. As shown below, application of the standard DCF model to utility stocks understates the investor's expected return when the market-to-book (M/B) ratio of a given stock exceeds unity. This was particularly relevant in the capital market environment of the 1990s and 2000s where utility stocks were trading at M/B ratios well above unity and have been for nearly two decades. The converse is also true, that is, the DCF model overstates that investor's return when the stock's M/B ratio is less than unity. The reason for the distortion is that the DCF market return is applied to a book value rate base by the regulator, that is, a utility's earnings are limited to earnings on a book value rate base[4].

As he explains, DCF models assume an M/B ratio of 1.0 and therefore under- or over-states investors' required return when market value exceeds or is less than book value, respectively. It does so because equity investors evaluate

4 Morin, at 434.

and receive their returns on the market value of a utility's common equity, whereas regulators authorize returns on the book value of common equity. This means that the market-based DCF will produce the total annual dollar return expected by investors, only when market and book values of common equity are equal, a very rare and unlikely situation.

Q. Why do market and book values diverge?

A. Market values can diverge from book values for a myriad of reasons including, but not limited to, earnings per share ("EPS") and dividends per share ("DPS") expectations, merger / acquisition expectations, interest rates, etc. As noted by Phillips:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.[5]

In addition, Bonbright states:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, *whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market*. In short, market prices are beyond the control, though not beyond the influence of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it ... would result in harmful, uneconomic shifts in public utility rate levels. (italics added)[6]

5 Charles F. Phillips, The Regulation of Public Utilities, Public Utilities Reports, Inc., 1993, at 395.
6 James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988), at 334.

Q. Can the under- or over-statement of investors' required return by the DCF model be demonstrated mathematically?

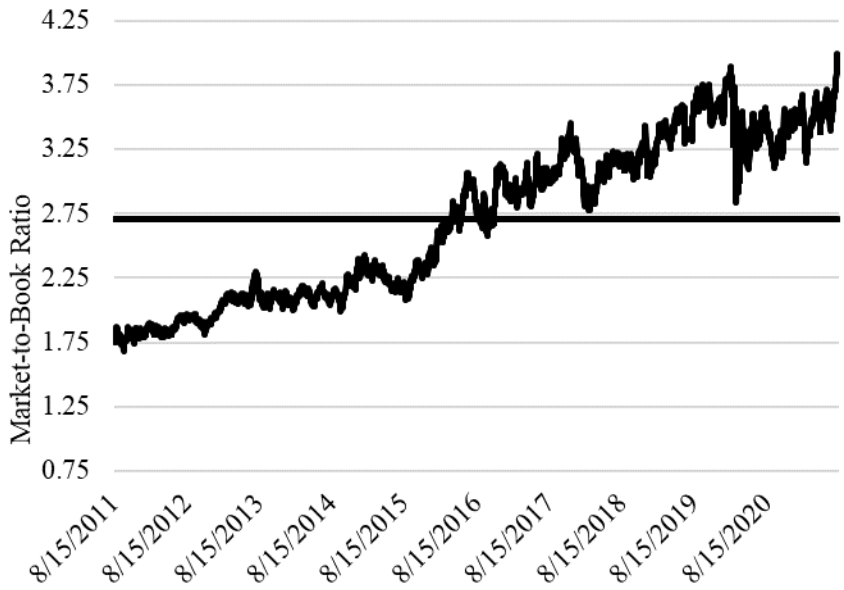
A. Yes. Schedule DWD-2R demonstrates how market-based DCF cost rates of 9.24% and 9.34%, when applied to a book value substantially below market value, will understate investors' required return on market value. As shown, there is no realistic opportunity to earn the expected market-based rate of return on book value. For example, in Column [A], investors expect a 9.24% return on an average market price of $73.87 for Mr. Keller's proxy group. Column [B] shows that when Mr. Keller's 9.24% return rate is applied to a book value of $21.90,[7] the total annual return opportunity is $2.02. After subtracting dividends of $1.41, the investor only has the opportunity for $0.61 in market appreciation, or 0.83%. The magnitude of the understatement of investors' required return on market value using Mr. Keller's 9.24% cost rate is 6.50%, which is calculated by subtracting the market appreciation based on book value of 0.83% from Mr. Keller's expected growth rate of 7.33%. A similar understatement of 6.67% is indicated for Mr. Eastman's DCF cost rate.

Q. How do M/B ratios of the Opposing Witnesses proxy group compare to the ten-year average?

A. The M/B ratio of the Opposing Witnesses' proxy groups are currently extraordinarily high compared to their ten-year averages. As shown in Chart 1 below, since 2016, the M/B ratio of the Opposing Witnesses' proxy groups have been above the ten-year average M/B ratio of approximately 2.70 times.

7 Representing a market-to-book ratio of 337.36%.

Chart 1: M/B Ratios of The Opposing Witness' Proxy Groups Compared With Ten-Year Average[8]



The significance of this is that even though the ten-year average M/B ratio has always been above 1.0x, the current M/B ratio is even further removed from 1.0x, further distorting DCF results.

Q. Is there another way to quantify the inaccuracy of the DCF model when M/B ratios are different than unity?

A. Yes. One can quantify the inaccuracy of the DCF model when M/B ratios are not at unity by estimating the implied DCF model results (based on a market-value capital structure) to reflect a book-value capital structure. This can be measured by first calculating the market value of each proxy company's capital structure, which consists of the market value of the company's common equity (shares outstanding multiplied by price), and the fair value of the company's long-term debt

8 Source: Bloomberg Financial Services.

and preferred stock. All of these measures, except for price, are available in each company's SEC Form 10-K.

Second, one must de-leverage the implied cost of common equity based on the DCF. This is derived using the Modigliani / Miller equation[9] as illustrated in Schedule DWD-3R and shown below:

$$ku = ke - (((ku - i)(1 - t))\ D/E) - (ku - d)\ P/E \quad \text{[Equation 1]}$$

where:

ku	=	Unlevered (i.e., 100% equity) cost of common equity;
ke	=	Market determined cost of common equity;
i	=	Cost of debt;
t	=	Income tax rate;
D	=	Debt ratio;
E	=	Equity ratio;
d	=	Cost of preferred stock; and
P	=	Preferred equity ratio.

For example, using data specific to Mr. Keller's proxy group, the equation becomes:

$$ku = 9.24\% - (((ku – 5.05\%)(1 - 21\%))\ 21.82\% / 78.16\%) - (ku – 5.76\%)\ 0.02\% / 78.16\%$$

Solving for ku results in an unlevered cost of common equity of 8.48%.

Next, one must re-lever those costs of common equity by relating them to each proxy group's average book capital structure as shown below:

$$ke = ku + (((ku – i)(1 – t))\ D/E) + (ku – d)\ P/E \quad \text{[Equation 2]}$$

9 The Modigliani / Miller theorem is an influential element of economic theory and forms the basis for modern theory on capital structure. *See,* Modigliani, F., and Miller, M. "The Cost of Capital, Corporation Finance and the Theory of Investment", *The American Economic Review*, Vol. 48, No. 3, (June 1958), at 261-297.

Once again, using data specific to Mr. Keller's proxy group, the equation becomes:

ke =8.48% + (((8.48%-5.05%)(1-21%))48.11%/51.84%) + (8.48%-5.76%)0.05%/51.84%

Solving for ke results in an 11.00% indicated cost of common equity relative to the book capital structure of the proxy group, which is an increase of 1.76% over Mr. Keller's indicated DCF result of 9.24%. A similar increase of 1.80% is seen when the same analysis is performed on Mr. Eastman's recommended ROE of 9.34%.

The leverage-adjusted DCF results of the Opposing Witnesses are still not applicable to the Company, as they do not reflect the higher risk that the Company faces relative to the proxy group, given the Company's smaller size. Additionally, as stated above, consideration of multiple ROE models is also necessary to gain further insight into the investor-required return, where the DCF is only one tool among many.

Q. Has this Commission recognized this tendency of the DCF model to mis-specify investors' required return when M/B ratios are not at unity?

A. Yes. This Commission recognized this tendency in its order of August 26, 2005 in *The City of Lancaster – Sewer Fund,* Docket Nos. R-00049862, et al., when it adopted the Administrative Law Judge's market-to-book adjustment of 65 basis points (0.65%) because such an adjustment was "consistent with our recent orders in *PAWC, Aqua,* and *PPL*" and "as in *PPL*, we find that adjustment is necessary <u>because the DCF method produces the investor required return based on the current market price, not the return on the book value capitalization.</u>" With the MTB adjustment, the equity return allowance is 10.75 percent. (emphasis added)

In 2007, the PA PUC again affirmed the tendency of the DCF model to mis-specify investors' required return in its Order of February 8, 2007 in *PPL Gas Utilities Corporation,* Docket No. R-00061398, et al., when it stated:

> The ALJ stated that the OTS and the OCA are correct that the Commission favors the DCF method to determine the cost of equity. However, the ALJ concluded, based on recent precedent, that the Commission consistently has adopted a leverage adjustment to compensate for the difference between market prices and book value (used in ratemaking). (*See, Aqua Pennsylvania*, 204, 234 (2004); *Pa. PUC v. PPL Electric Utilities Corp*., Docket No. R-00049255, at 70-71 (2004); *Pa. PUC v. Pennsylvania American Water Co.*, 2002 Pa. PUC LEXIS 1; *Pa. PUC v. Phila. Suburban Water Co*., 219 PUR4TH 272 (2002); *Pa. PUC v. Pennsylvania American Water Co*., 231 PUR4TH 277 (2004)). According to the ALJ, these cases are persuasive that a leverage adjustment should be employed with the DCF analysis. (R.D. at 62-63).

Q. Are you advocating a specific adjustment to the DCF results to correct for its mis-specification of the investor-required return?

A. No. The purpose of this discussion is to demonstrate that, like all cost of common equity models, the DCF has its limitations and that the use of multiple cost of common equity models in conjunction with informed expert judgment provides a more accurate and reliable picture of the investor-required ROE than does a narrow evaluation of the results of one model.

IV. <u>RESPONSE TO I&E WITNESS KELLER</u>

Q. Please summarize Mr. Keller's recommendations.

A. Mr. Keller accepts the Company's proposed capital structure, which consists of 52.32% long-term debt and 47.68% common equity. Mr. Keller also accepts the Company's proposed debt cost rate of 5.05%.[10] Regarding the ROE, Mr. Keller

10 Keller Direct Testimony, at 9-11 (Wastewater Testimony).

recommends the Commission authorize CUPA's water operations an ROE of 0.00% because he claims "the Company is not meeting its obligation to provide adequate and reasonable service to its customers."[11] For CUPA's wastewater operations, Mr. Keller recommends an ROE of 9.24%,[12] which is based solely on the results of his DCF model, as discussed previously.

Q. How does Mr. Keller's ROE recommendation compare with the recently published (July 15, 2021) PA PUC Bureau of Technical Utility Services ("BTUS") report on the quarterly earnings of jurisdictional utilities for the year ended March 31, 2021, used to set the ROE for Utilities' Distribution System Improvement Charge ("DSIC")?

A. Not well. The BTUS calculated a 9.85% ROE applicable to water and wastewater utilities for their DSIC investments, which is over 60 basis points higher than Mr. Keller's and 50 basis points higher than Mr. Eastman's recommendations in this proceeding.

Q. Would the BTUS DSIC ROE understate the ROE for a vertically-integrated water and wastewater utility like CUPA?

A. Yes, it would. The BTUS DSIC ROE applies only to transmission and distribution investments, which is low-risk compared to the production and treatment of water and wastewater. As such, the BTUS DSIC ROE of 9.85% should be considered a floor for an acceptable ROE for CUPA.

11 Keller Direct Testimony, at 18 (Water Testimony).
12 Keller Direct Testimony, at 5 (Wastewater Testimony).

Q. In addition to the undue weighting of his DCF model results, what are the additional areas of disagreement between you and Mr. Keller?

A. In addition to disagreeing with the weight given to his DCF model results, I also disagree with 1) his recommended ROE of 0.00% for the Company's water operations; 2) his use of a 10-year Treasury bond in his CAPM analysis; 2) his failure to use a fully-projected risk-free rate in his CAPM analysis; 3) his failure to use the empirical CAPM ("ECAPM") in his CAPM analysis; and 4) his failure to reflect the Company's smaller size compared to his proxy group.

A. <u>0.00% RECOMMENDATION FOR WATER OPERATIONS</u>

Q. Do you agree with Mr. Keller's ROE recommendation for the Company's water operations?

A. No, I do not. As stated in my Direct Testimony, utilities must have sufficient earnings in order to attract new capital from investors.[13] Mr. Keller's recommended zero ROE for the Company's water operations will materially impact the speed and cost with which the Company meets its customers' needs. Company Witness Emily Long will address Mr. Keller's testimony as it relates to customer complaints and his reliance upon lay opinions on water quality or water system operations.

Q. Please discuss the impact of a ROE of 0.00% for the Company's water operations.

A. Generally, the cost of capital is an opportunity cost, which means that the true cost of capital is the return that could have been realized on the next best available investment of similar risk. If CUPA is authorized an ROE of 0.00%, investors,

13 D'Ascendis Direct Testimony, at 7.

including CUPA's parent company, will simply invest where the opportunity to earn a higher ROE exists, given their risk level. CUPA competes for capital with other utilities, many of which have authorized/earned ROEs higher than theirs. An authorized return of 0.00% will further deteriorate CUPA's financial position and would impact the willingness of equity investors to provide capital. This, in turn, would impact the speed and cost with which the Company will be able to meet customers' needs. While management would still seek to serve customers as well as possible within those changed capital conditions, costs to customers would surely rise and capital would be deployed more slowly. Moreover, while under current market conditions one might not expect a complete loss of access to capital, market conditions could occur where the capital constraints can jeopardize CUPA's access to capital at any cost.

Q. Are there any other effects of an authorized ROE of 0.00% for CUPA?

A. Yes, there are. An authorized ROE of 0.00% for CUPA can have a dual impact of not only the direct financial impact to CUPA, but also the impact of the Commission's relationship to the utilities in their regulatory jurisdiction. The regulatory environment is one of the most important issues considered by both debt and equity investors in assessing the risks and prospects of utility companies. Moody's Investors Service finds the regulatory environment to be so important that 50.00% of the factors that weigh in the Company's ratings determination are determined by the nature of regulation:

> For rate-regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations. The regulatory environment is comprised of two rating factors - the Regulatory Framework and its corollary factor, the Ability to Recover Costs and Earn Returns. Broadly speaking, the Regulatory

> Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation. The Ability to Recover Costs and Earn Returns relates more directly to the actual decisions, including their timeliness and the rate-setting outcomes.[14]

Similarly, Standard & Poor's ("S&P") has noted that:

> The assessment of regulatory risk is perhaps the most important factor in Standard & Poor's Ratings Services' analysis of a U.S. regulated, investor-owned utility's business risk. Each of the other four factors we examine--markets, operations, competitiveness, and management--can affect the quality of the regulation a utility experiences, but we believe the fundamental regulatory environment in the jurisdictions in which a utility operates often influences credit quality the most.[15]

In summary, the adoption of a 0.00% ROE for CUPA's water operations would ultimately harm CUPA, its customers, and damage investor's perception of the Pennsylvania regulatory climate.

B. <u>APPLICATION OF THE CAPM</u>

Q. Please briefly summarize Mr. Keller's CAPM methodology and results.

A. Mr. Keller uses the average *Value Line Investors Service ("Value Line")* beta of his proxy group, a projected 10-year Treasury yield for his risk-free rate, and an average of two expectational market returns to arrive at his CAPM result of 9.56%.[16]

Q. Do you have any concerns with Mr. Keller's application of the CAPM?

A. Yes, I do. While I agree with Mr. Keller's use of *Value Line* betas, projected interest rates, and projections of market returns, I have concerns regarding his selection of a risk-free rate and his failure to conduct an ECAPM.

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14 *See,* Moody's Investors Service, *Rating Methodology; Regulated Gas and Electric Utilities*, June 23, 2017, at 4.
15 Standard & Poor's, *Utilities: Assessing U.S. Utility Regulatory Environments*, November 15, 2011.
16 Keller Direct Testimony, at 29.

Q. Please comment on Mr. Keller's use of 10-year treasury bonds as his risk-free rate in his CAPM analysis.

A. As discussed below, the tenor of the risk-free rate used in the CAPM should match the life (or duration) of the underlying investment. As noted by Morningstar:

> The traditional thinking regarding the time horizon of the chosen Treasury security is that it should match the time horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[17]

Morin also confirms this when he states:

> [b]ecause common stock is a long-term investment and because the cash flows to investors in the form of dividends last indefinitely, the yield on very long-term government bonds, namely, the yield on 30-year Treasury bonds, is the best measure of the risk-free rate for use in the CAPM (footnote omitted)… The expected common stock return is based on long-term cash flows, regardless of an individual's holding time period.[18]

Pratt and Grabowski recommend a similar approach to selecting the risk-free rate: "In theory, when determining the risk-free rate and the matching ERP you should be matching the risk-free security and the ERP with the period in which the investment cash flows are expected."[19] To that point, a 2004 paper titled *Applying The Capital Asset Pricing Model* by Robert Harris reviews current practices for application of the CAPM and, when summarizing best current practices, concludes "[t]he risk-free rate should match the tenor of the cash flows

17 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 44.
18 Morin, at 151.
19 Shannon Pratt and Roger Grabowski, Cost of Capital: Applications and Examples, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008), at 92. "ERP" is the Equity Risk Premium.

being valued."[20] As a practical matter, equity securities represent a perpetual claim on cash flows; 30-year Treasury bonds are the longest-maturity securities available to match that perpetual claim. Mr. Keller's use of a medium-term Treasury bond does not match the life of the assets being valued. The use of a 30-year Treasury bond is the more appropriate risk-free rate.

Q. Please discuss Mr. Keller's projected risk-free rate.

A. Mr. Keller and I use the same publication for our forecasted interest rate data, *Blue Chip Financial Forecasts* ("*Blue Chip*"). Mr. Keller incorporates forecasts from the third quarter of 2020 out to the period 2023-2027, although forecasts are published by *Blue Chip* to the period 2028-2032. Not incorporating the longest projection available is inconsistent with his application of the DCF model in which there is an assumption that the projected "g" is constant into perpetuity, creating a mismatch. It is also inconsistent with the Efficient Market Hypothesis ("EMH") on which the DCF is based. According to Fama,[21] a market in which prices always "fully reflect" available information is called "efficient." There are three forms of the EMH, namely:

(1) The "weak" form asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis cannot enable an investor to "outperform the market."

(2) The "semi-strong" form asserts that all publicly available information is fully reflected in securities prices. In other words, fundamental analysis cannot enable an investor to "outperform the market."

20 Paper cited with permission of author.
21 Eugene F. Fama. "Efficient Capital Markets: A Review of Theory and Empirical Work", *The Journal of Finance*, Vol. 25, No. 2. (May 1970), pp. 383-417.

(3) The "strong" form asserts that all information, both public and private, is fully reflected in securities prices. In other words, even insider information cannot enable an investor to "outperform the market."

The "semi-strong" form is generally considered the most realistic because the illegal use of insider information can enable an investor to "beat the market" and earn excessive returns, thereby disproving the "strong" form. The semi-strong form of the EMH assumes that all information (including long-term forecasts of interest rates) are available to the investor, which means the 2028-2032 forecasted interest rate would be considered by investors when making investment decisions and, therefore, should be included in Mr. Keller's CAPM analysis.

Q. Mr. Keller did not perform an ECAPM analysis. Please comment.

A. As discussed in my Direct Testimony,[22] although numerous tests of the CAPM have confirmed its validity, it has been determined that the empirical Security Market Line ("SML") described by the traditional CAPM is not as steeply sloped as the predicted SML. Tests of the CAPM have measured the extent to which security returns and betas are related as predicted by the CAPM, thus confirming its validity. As such, Mr. Keller should have used the ECAPM in his CAPM analysis.

Q. Is there any additional evidence to support the use of the ECAPM?

A. Yes, there is. Dianna R. Harrington summarizes studies on the predicted results of the CAPM versus the actual returns in her text Modern Portfolio Theory & the Capital Asset Pricing Model:

> So far we have learned some very interesting things about the CAPM and reality. Some of the earliest work tested realized data (history) against data generated by simulated portfolios. Early studies by Douglas (1969) and Lintner (Douglas [1969]) showed discrepancies

22 D'Ascendis Direct Testimony, at 29-30.

between what was expected on the basis of the CAPM and the actual relationships that were apparent in the capital markets. Theoretically, the minimal rate of return from the portfolios (the intercept) and the actual risk-free rate for the period should have been equal. They were not.

* * *

Another study, now more famous than Lintner's was done by Black, Jensen, and Scholes (1972). Lintner had used what is called a cross-sectional method (looking at a number of stock returns during one time period), whereas Black, Jensen, and Scholes used a time-series method (using returns for a number of stocks over several time periods). To make their test, Black, Jensen, and Scholes assumed that what had happened in the past was a good proxy for the investor expectations (a frequent assumption in CAPM tests). Using historical data, they generated estimates using what we call the market model:

$$R_{jt} = \alpha_j + \beta_j (R_{mt}) + \varepsilon_j$$

Where:

R = total returns

β = the slope of the line (the incremental return for risk)

α = the intercept or a constant (expected to be 0 over time and across all firms)

ε = an error term (expected to be random, without information)

m = the market proxy

j = the firm or portfolio

t = the time period

Instead of using single stocks, they formed portfolios in an effort to wash out one source of error; because betas of single firms are quite unstable. On the basis of the CAPM, they expected to find

1. That the intercept was equal to the risk-free rate (their proxy was the Treasury bill rate)

2. That the capital market line had a positive slope and that riskier (higher beta) securities provided higher return

Instead they found

1. That the intercept was different from the risk-free rate

2. That high-risk securities earned less and low-risk securities earned more than predicted by the model

3. That the intercept seemed to depend on the beta of any asset: high-beta stocks had a different intercept than low-beta stocks

* * *

> Fama and MacBeth (1974) criticized the Black, Jensen, and Scholes study (hereafter called BJS). In a reformation of the study, they supported the first of the BJS findings. They found that the intercept exceeded the risk-free proxy, but did not find the evidence to support the other BJS conclusions.[23]

Harrington discusses Black's potential solution to this phenomenon:

> Black's replacement for the risk-free asset was a portfolio that had no covariability with the market portfolio. Because the relevant risk in the CAPM is systematic risk, a risk-free asset would be the one with no volatility relative to the market – that is, a portfolio with a beta of zero. All investor-perceived levels of risk could be obtained from various linear combinations of Black's zero-beta portfolio and the market portfolio… Since R_z (the rate of return of the zero-beta asset) and R_m are uncorrelated (as R_f and R_m were assumed to be in the simple CAPM), the investor can choose from various combinations of R_z and R_m. On segment R_mY, R_z, is sold short and proceeds are invested in R_m. On segment R_zR_m, portions of the zero-beta portfolio are purchased. At R_m, the investor is fully invested in the market portfolio. The equilibrium CAPM was rewritten by Black as follows:
>
> $$E(R_i) = (1 - \beta_i)\, E(R_z) + \beta_i E(R_m)$$
>
> *Where:*
>
> E indicates expected,
>
> $E(R_z)$ is less than $E(R_m)$, and
>
> R_z holdings over the whole market must be in equilibrium. That is, the number of short sellers and lenders of securities must be equal.
>
> Black's adaptation is intriguing. The result of using this model is a capital market line that has a less steep slope and a higher intercept than those of the simple CAPM. If Black's model is more correct in its description of investor behavior in the marketplace, then the use of the simple model would produce equity return predictions that

23 Dianna R. Harrington, Modern Portfolio Theory & the Capital Asset Pricing Model – A User's Guide, Prentice-Hall, Inc. 1983, at 43-45.

would be too low for sticks with betas greater than one and too high for stocks with betas of less than one.[24]

Q. Does Mr. Keller have concerns regarding the ECAPM?

A. Yes, he does. Mr. Keller claims that the ECAPM "corrects none of the underlying problems of the CAPM"[25] without providing evidence to that effect. Conversely, I have provided substantial evidence that the ECAPM is a necessary adjustment to the CAPM in my Direct Testimony and above. Mr. Keller's concerns should be given no weight by the Commission.

Q. What would Mr. Keller's CAPM results indicate if corrected to reflect a fully forecasted 30-year treasury bond yield and the use of the ECAPM?

A. As shown in Schedule DWD-4R, using a fully projected 30-year Treasury bond yield and employing the ECAPM would result in an indicated ROE of 10.06%. This indicated result is still understated, as it does not reflect CUPA's small size relative to the proxy group.

C. FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE

Q. Does Mr. Keller make a specific adjustment to reflect the smaller size of the Company relative to his proxy group?

A. No. As discussed in my Direct Testimony,[26] relative company size is a significant element of business risk for which investors expect to be compensated through greater returns. Smaller companies are simply less able to cope with significant events which affect sales, revenues and earnings. For example, smaller

24 Dianna R. Harrington, Modern Portfolio Theory & the Capital Asset Pricing Model – A User's Guide, Prentice-Hall, Inc. 1983, at 31-32.
25 Keller Direct Testimony, at 29 (Wastewater Testimony).
26 D'Ascendis Direct Testimony, at 39-43.

companies face more exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few large customers would have a far greater effect on a small company than on a larger company with a more diverse customer base. Finally, smaller companies are generally less diverse in their operations and have less financial flexibility. Consistent with the financial principle of risk and return in my Direct Testimony,[27] such increased risk due to small size must be taken into account in the allowed rate of return on common equity.

Q. Does Mr. Keller rely on studies that support the small size premium?

A. Yes. In the Fama and French article cited by Mr. Keller in his direct testimony, the authors propose that their three-factor model include the "Small Minus Big" factor, which indicates that small capitalization firms are more risky than large capitalization firms,[28] confirming that size is a risk factor which must be taken into account in estimating the cost of common equity.

Q. Is there another empirical study in addition to the empirical analysis you performed in your Direct Testimony that evaluates the effect of size on the cost of equity?

A. Yes. Duff & Phelps' ("D&P") 2020 Valuation Handbook Guide to Cost of Capital – Market Results through 2019 presents a Size Study based on the relationship of various measures of size and return. Relative to the relationship between average annual return and the various measures of size, D&P state:

> **The size of a company is one of the most important risk elements to consider when developing cost of equity estimates**

27 D'Ascendis Direct Testimony, at 11.
28 Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence", *Journal of Economic Perspectives*, Vol. 18, No. 3, Summer 2004, at 39.

> **for use in valuing** a firm. Traditionally, researchers have used market value of equity (*i.e.,* "market capitalization" or "market cap") as a measure of size in conducting historical rate of return research. For example, the Center for Research in Security Prices (CRSP) "deciles" are developed by sorting U.S. companies by market capitalization. Another example is the Fama-French "Small Minus Big" (SMB) series, which is the difference in return of "small" stocks minus "big" (*i.e.*, large) stocks, as defined by market capitalization. (emphasis added) [29]

The Size Study uses the following eight measures of size, all of which have empirically shown that over the long-term, the smaller the company, the higher the risk:

- Market Value of Common Equity (or total capital if no debt / equity);
- Book Value of Common Equity;
- Net Income (five-year average);
- Market Value of Invested Capital;
- Total Assets (Invested Capital);
- Earnings Before Interest, Taxes, Depreciation & Amortization ("EBITDA") (five-year average);
- Sales / Operating Revenues; and
- Number of Employees.

I used the D&P Size Study to determine the approximate magnitude of any necessary risk premium due to the size of the Company relative to Mr. Keller's and Mr. Eastman's proxy groups. Schedule DWD-5R shows the relative size of each Company compared with the proxy groups. Indicated size adjustments based on these relative measures range from 1.13% to 3.37% for CUPA. From these

29 Duff & Phelps' 2020 Valuation Handbook Guide to Cost of Capital – Market Results through 2019, at p. 10-1.

results, it is clear that the Company is riskier than the Opposing Witness' proxy groups due to its small size, and that my proposed size adjustment of 100 basis points for the Company is conservative.

Q. Mr. Keller says that your size adjustment is not specific to utilities because the study you cite uses data from the New York Stock Exchange, American Stock Exchange and National Association of Security Dealers Automated Quotation System. Is this a valid criticism?

A. No. While the study does use data from these exchanges, all utility companies are traded on one of these exchanges, including the proxy group companies. This means that utilities are, indeed, part of the size study I use to derive my size adjustment.

Q. Mr. Keller cites a study by Dr. Annie Wong for the proposition that there is no size premium for utilities. Does this study establish that contention?

A. No. Dr. Wong's study is flawed because she attempts to relate a change in size to beta coefficients, which accounts for only a small percentage of diversifiable company-specific risk. However, size is company-specific and therefore diversifiable.

Q. Is there also a published response to Dr. Wong's article?

A. Yes, there is. In response to Professor Wong's article, *The Quarterly Review of Economics and Finance* published an article in 2003, authored by Thomas M. Zepp, which commented on the Wong article cited by the I&E ROE Witnesses. Relative to Dr. Wong's results, Dr. Zepp concluded in the Abstract on page 1 of his article: "Her weak results, however, do not rule out the possibility of a small firm

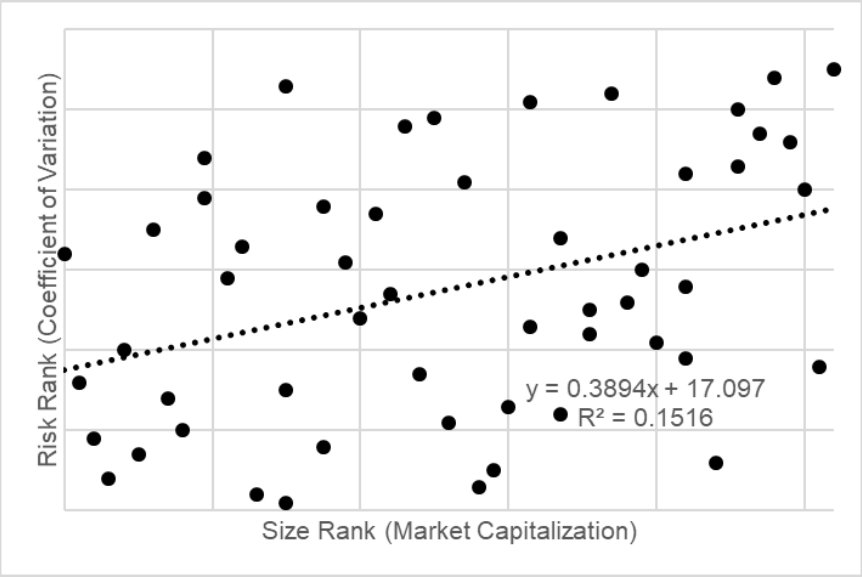
effect for utilities."[30] Dr. Zepp also noted on page 582 that: "Two other studies discussed here support a conclusion that smaller water utility stocks are more risky than larger ones. To the extent that water utilities are representative of all utilities, there is support for smaller utilities being more risky than larger ones."[31]

Q. Have you performed a study linking size and risk for utility companies?

A. Yes. I performed a study on whether or not the size effect is in fact applicable to utilities. My study included the universe of electric, gas, and water companies included in *Value Line Standard Edition.* From each of the utilities' *Value Line Ratings & Reports*, I calculated the 10-year coefficient of variation[32] ("CoV") of net profit (a measure of risk) and current market capitalization (a measure of size) for each company. After ranking the companies by size (largest to smallest) and risk (least risky to most risky), I made a scatter plot of the data, as shown on Chart 2, below:

30 Thomas M. Zepp, "Utility Stocks and the Size Effect --- Revisited", *The Quarterly Review of Economics and Finance*, 43 (2003), at 578-582.
31 *Ibid, at 578-583.*
32 The coefficient of variation is used by investors and economists to determine volatility.

Chart 2: Relationship Between Size and Risk For The *Value Line* Universe of Utility Companies



As shown in Chart 2 above, as company size decreases (increasing size rank), the CoV increases, linking size and risk for utilities.

Q. Finally, does this Commission consider size in determining the authorized ROE?

A. Yes. In Docket No. R-2019-3008212, the Commission stated:

> Based on the evidence of record, we agree with he recommendation of the ALJs that the Company be awarded a DCF cost of common equity which is one standard deviation about the average of the mean and median proxy group ROE from the Company's DCF analysis. In so doing, we recognize that the Company's size is a factor in assessing its ability to attract capital. Accordingly, we shall reject Citizens' Exception No. 10, I&E's Exception No. 4, and the OCA's Exception No. 7, consistent with the following discussion.
>
> We are not convinced by the arguments of I&E and the OCA that the ALJs erred in awarding a size adjustment to Citizens'. Rather, we are of the same position as the ALJs that the Company's witness Mr. D'Ascendis offered persuasive record evidence that there is a general inverse relationship between size and risk, such that smaller utilities like Citizens' face greater risk.[33]

33 Pennsylvania Public Utility Commission, Docket No. R-2019-3008212, Opinion and Order, at 103.

Q. What would be the ROE result using the Commission's method in this case?

A. The average of the mean and median DCF model result is 8.17%, as shown on page 3 of Schedule DWD-1R. The standard deviation of those results are 2.34%. Adding the standard deviation to the average of the mean and median DCF result would indicate an ROE of 10.51% for CUPA, which is in my recommended range of ROEs, but higher than my ultimate recommendation in this case. In view of this, my size adjustment should be considered conservative.

D. RESPONSE TO MR. KELLER'S CRITICISMS OF MY DIRECT TESTIMONY

Q. Does Mr. Keller have critiques of the analyses made in your Direct Testimony?

A. Yes. Mr. Keller has the following critiques of my analyses in my Direct Testimony: 1) that I have given weight to models other than the DCF in my determination of the ROE for the Company; 2) that the predictive risk premium model ("PRPM") is relatively new and not commonly used and cannot be performed without expense; 3) that my risk-free rate should be based upon the 10-year Treasury bond yield instead of the 30-year Treasury bond yield; 4) that the ECAPM is inappropriate for cost of capital purposes; 5) that my selection and use of a Non-Price Regulated Proxy Group similar in total risk to my Proxy Group is "speculative and subjective";[34] and 6) that the size adjustment I use is not applicable to utility companies.

As I addressed points 3), 4), and 6) in my response to Mr. Keller's analyses, I will not address them again here. I will address the remaining critiques in turn.

34 Keller Direct Testimony, at 33.

Q. Mr. Keller does not agree with your giving weight to any of your other ROE model results besides the DCF.[35] Please respond.

A. As discussed in detail previously in this testimony, it is appropriate to rely on multiple cost of common equity models in determining an investor-required return. Since every cost of common equity model has limiting assumptions, considering more relevant data, not less, adds accuracy and reliability to the informed expert judgment needed to determine an appropriate ROE.

Q. Mr. Keller cites that a disadvantage with the CAPM analysis is that its inputs can be easily manipulated.[36] What is your response?

A. All ROE models are only as good as their inputs, and all ROE models can be easily manipulated by changing those inputs. For example, the DCF model has a number of inputs and variations of inputs that can drastically alter results as shown on Table 2:

Table 2: Various Inputs to DCF Models

Input	Variations of Inputs
Cash Flow Stream	Constant-Growth, Blended Growth, Multi-Stage Growth
Dividend Yield	Spot Dividend Yield, average dividend yield
Adjusted Dividend Yield	No adjustment, ½ g adjustment, full g adjustment, projected dividend
Growth Rates	Historical v. Projected v. Sustainable
Growth Measure	EPS, DPS, Book Value Per Share
Sources of Growth Rates	Value Line, Zacks, Yahoo, MorningStar, etc.

35 Keller Direct Testimony, at 26 (Wastewater Testimony).
36 Keller Direct Testimony, at 26 (Wastewater Testimony).

Q. Mr. Keller expresses concerns about the Risk Premium Model not being able to measure the cost of equity directly and is not company-specific, due to the lack of a Beta coefficient. Please respond.

A. Mr. Keller's concerns are misplaced. The PRPM model used in my risk premium model analysis measures the risk-return relationship directly using the same company-specific market prices used to derive company-specific beta coefficients. The authors state:

> The purpose of this paper is to present, test empirically and apply a recently developed general consumption-based asset pricing model that estimates the risk-return relationship directly from asset pricing data and, when estimated with recently developed time-series methods, produces a prediction of the equity risk premium that is driven by its predicted volatility.[37]

In addition, my traditional risk premium analysis does apply beta to the indicated equity risk premium to create a proxy group-specific equity risk premium.[38]

Q. Mr. Keller says that the PRPM was published in 2011.[39] Does that mean that the methodology behind the PRPM was also published in 2011?

A. No. As discussed in my Direct Testimony,[40] the PRPM is based on the research of Robert F. Engle, dating back to the early 1980s. Dr. Engle discovered that the volatility of market prices, returns and risk premiums clusters over time, making prices, returns and risk premiums highly predictable. In 2003, he shared the Nobel Prize in Economics for this work, characterized as "methods of analyzing economic

37 Pauline M. Ahern, Frank J. Hanley, and Richard A. Michelfelder, "A New Approach for Estimating the Equity Risk Premium for Public Utilities", *The Journal of Regulatory Economics*, December 2011, 40:261-278.
38 D'Ascendis Direct Testimony, at 27-28.
39 Keller Direct Testimony, at 31.
40 D'Ascendis Direct Testimony, at 18.

time series with time-varying volatility ("ARCH").[41] Dr. Engle[42] noted that relative to volatility, "the standard tools have become the ARCH / GARCH[43] models." Hence, the methodology is not new.

In addition, the GARCH methodology has been well tested by academia, since Engle's, *et al*. research was originally published in 1982, 39 years ago. I use the well-established GARCH methodology to estimate the PRPM model using a standard commercial and relatively inexpensive statistical package, Eviews,© to develop a means by which to estimate a predicted equity risk premium, and when added to a bond yield, results in a cost of common equity.

The PRPM is also in the public domain, having been published six times in academically peer-reviewed journals: Journal of Economics and Business (June 2011 and April 2015),[44] The Journal of Regulatory Economics (December 2011),[45] The Electricity Journal (May 2013 and March 2020),[46] and Energy Policy (April

41 www.nobelprize.org.

42 Robert Engle, "GARCH 101: The Use of ARCH / GARCH Models in Applied Econometrics", *Journal of Economic Perspectives*, Volume 15, No. 4, Fall 2001, p. 157-168.

43 Autoregressive Conditional Heteroskedasticity / Generalized Autoregressive Conditional Heteroskedasticity.

44 Eugene A. Pilotte and Richard A. Michelfelder, "Treasury Bond Risk and Return, the Implications for the Hedging of Consumption and Lessons for Asset Pricing", *Journal of Economics and Business*, June 2011, 582-604; and Richard A. Michelfelder, "Empirical Analysis of the Generalized Consumption Asset Pricing Model: Estimating the Cost of Capital", *Journal of Economics and Business*, April 2015, 37-50.

45 Pauline M. Ahern, Frank J. Hanley, and Richard A. Michelfelder, "New Approach to Estimating the Equity Risk Premium for Public Utilities", *The Journal of Regulatory Economics*, December 2011, at 40:261-278.

46 Richard A. Michelfelder, Pauline M. Ahern, Dylan W. D'Ascendis, and Frank J. Hanley, "Comparative Evaluation of the Predictive Risk Premium Model, the Discounted Cash Flow Model and the Capital Asset Pricing Model for Estimating the Cost of Common Equity", The Electricity Journal, April 2013, at 84-89; and Richard A. Michelfelder, Pauline M. Ahern, and Dylan W. D'Ascendis, "Decoupling, Risk Impacts and the Cost of Capital", *The Electricity Journal,* January 2020.

2019).[47] Notably, none of these articles have been rebutted in the academic literature.

Finally, the PRPM has also been presented to a number of utility industry/regulatory/academic groups including the following: The Edison Electric Institute Cost of Capital Working Group; The NARUC Staff Subcommittee on Accounting and Finance; The National Association of Electric Companies Finance/Accounting/Taxation and Rates and Regulations Committees; the NARUC Electric Committee; The Wall Street Utility Group; the Indiana Utility Regulatory Commission Cost of Capital Task Force; the Financial Research Institute of the University of Missouri Hot Topic Hotline Webinar; and the Center for Research and Regulated Industries Annual Eastern Conference on two occasions.

Q. Has the PRPM been implicitly accepted by other regulatory commissions?

A. Yes. In Docket No. 2017-292-WS, the Public Service Commission of South Carolina ("PSC SC") accepted Blue Granite Water Company's entire requested ROE, which included the PRPM. The relevant portion states:

> The Commission finds Mr. D'Ascendis' arguments persuasive. He provided more indicia of market returns, by using more analytical methods and proxy group calculations. Mr. D'Ascendis' use of analysts' estimates for his DCF analysis is supported by consensus, as is his use of the arithmetic mean. The Commission also finds that Mr. D'Ascendis' non-price regulated proxy group more accurately reflects the total risk faced [by] price regulated utilities and CWS. Furthermore, there is no dispute that CWS is significantly smaller than its proxy group counterparts, and, therefore, it may present a higher risk. An appropriate ROE for CWS is 10.45% to 10.95%. The Company used an ROE of 10.5% in computing its Application, a

47 Richard A. Michelfelder, Pauline M. Ahern, and Dylan W. D'Ascendis, "Decoupling Impact and Public Utility Conservation Investment", *Energy Policy*, April 2019, 311-319.

> return on the low end of Mr. D'Ascendis' range, and the Commission finds that ROE is supported by the evidence.[48]

It should also be noted that in the above passage the PSC SC also found my Non-Price Regulated Proxy Group to be appropriate.

In addition, in Docket No. W-354, Subs 363, 364 and 365, the State of North Carolina Utilities Commission approved my RPM and CAPM analyses, which used PRPM analyses as presented in this proceeding. The relevant portion of the order states:

> In doing so the Commission finds that the DCF (8.81%), Risk Premium (10.00%) and CAPM (9.29%) model results provided by witness D'Ascendis, as updated to use current rates in D'Ascendis Late-Filed Exhibit No. 1, as well as the risk premium (9.57%) analysis of witness Hinton, are credible, probative, and are entitled to substantial weight as set forth below.[49]

Q. Mr. Keller posits that you use proprietary software to conduct your PRPM.[50] Is that true?

A. No. The GARCH methodology is available in various statistical packages such as EViews®, SAS, RATS, S-Plus and JMulti, which are not cost-prohibitive and provide instructions for using the various statistical methodologies in their software. I provided all parties in these proceedings the backup data to run their own GARCH models. While the software I used in this proceeding costs approximately $1,500 for a single user commercial license,[51] JMulti is a free downloadable software with GARCH estimation applications.

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48 Docket No. 2017-292-WS - Order No. 2018-345, at 14 (May 17, 2018).
49 Docket No. W-354, Sub 363, 364, 365, *Order Granting Partial Rate Increase and Requiring Customer Notice*, at PDF 72 (March 31, 2020).
50 Keller Direct Testimony, at 27 (Wastewater Testimony).
51 http://www.eviews.com/general/prices/prices.html

Q. Mr. Keller states that the selection and use of non-price regulated groups comparable in total risk to the proxy group is speculative and subjective.[52] Please respond.

A. The selection criteria for my Non-Price Regulated Proxy Group were based on ranges of two measures of risk: 1) the unadjusted beta of the proxy group, which measures systematic, or market risk; and 2) the standard error of the regression, which gave rise to those betas, measuring non-systematic or diversifiable risk. Systematic plus non-systematic risk is one definition of total risk.[53] This is agreed upon by Mr. Keller, who states at points in his testimony: "Two types of risk are associated with a stock: (1) firm-specific risk (unsystematic risk); and (2) market risk (systematic risk), which is measured by a firm's beta."[54]

Each company I selected for my Non-Price Regulated Proxy Group was required to have an unadjusted beta (a measure of systematic risk) and a standard error of the regression (a measure of unsystematic risk) within the ranges generated by my proxy group, as explained in pages 35 and 36 of my Direct Testimony and on CUPA Statement No. 5, Schedule DWD-6. Business and financial risks may vary between companies and proxy groups, but if the collective average betas and standard errors of the regression of the group are similar, then the total, or aggregate, non-diversifiable market risks and diversifiable risks are similar, as noted in "Comparable Earnings: New Life for an Old Precept" provided in Schedule DWD-6R. Thus, because the non-price regulated companies are selected based on analyses of market data, they are comparable in total risk (even

52 Keller Direct Testimony, at 34.
53 Business risk plus financial risk is a second definition of total risk.
54 Keller Direct Testimony, at 12.

though individual risks may vary) to my proxy group. This is demonstrated clearly on page 273 of Jack C. Francis' Investments: Analysis and Management (page 3 of Schedule DWD-7R), which shows that total risk can be "partitioned into its systematic and unsystematic components." Essentially, companies that have similar betas and standard errors of regression have similar total investment risk.

Q. Mr. Keller criticizes the use of your Non-Price Regulated Proxy Group because the results of the models applied to the groups are not similar to the results of the same models applied to your Proxy Group.[55] Please respond.

A. The role of regulation when setting rates for a utility company is to simulate a competitive market and the returns that the regulator approves should be commensurate with the rates of return earned by firms with comparable risk. That being said, the ranges of the indicated ROEs produced by the common equity models applied to the Proxy Group and Non-Price Regulated Proxy Group in my ROE update do mostly overlap as shown below:

Table 3: Comparison of Model Results Applied to The D'Ascendis Water and Non-Price Regulated Proxy Groups[56]

	DCF	RPM	CAPM
D'Ascendis Proxy Group	4.82% - 11.50%	10.49% - 15.21%	9.59% - 12.42%
Non-Regulated Group Comparable to Water Group	5.34% - 17.49%	11.21%	9.67% - 11.98%

Given the indicated ranges of results of cost of common equity models applied to the Proxy Group and Non-Price Regulated Proxy Group, the objective of the comparable earnings model, and the adherence to the regulatory compact,

55 Keller Direct Testimony, at 33-34.
56 Note that ROE values two standard deviations outside of the mean for each model are excluded from these ranges.

the results of market models applied to the Non-Price Regulated Proxy Group comparable in total risk to my Proxy Group should be accepted by the Commission.

V. RESPONSE TO OCA WITNESS EASTMAN

Q. Please summarize Mr. Eastman's recommendations.

A. Like Mr. Keller, Mr. Eastman accepts the Company's proposed capital structure and cost of debt. Mr. Eastman's ROE recommendation of 9.34% relies solely on his DCF model results for his ROE recommendation, using the CAPM as a "check on reasonableness."[57]

Q. In addition to the undue weighting of his DCF model results, what are the additional areas of disagreement between you and Mr. Eastman?

A. In addition to disagreeing with the weight given to his DCF model results, I also disagree with 1) his use of current interest rates in his CAPM analysis; 2) his calculation of betas for his CAPM analysis; 3) his consideration of geometric mean returns and expected returns from investment houses in his determination of his market risk premium; and 4) his failure to consider CUPA's small size relative to the proxy group.

A. APPLICATION OF THE CAPM

Q. Please summarize Mr. Eastman's application of the CAPM.

A. Mr. Eastman used a six-month average yield on a 30-year Treasury bond as his risk-free rate, his own calculated betas, and expected market risk premiums from

57 Eastman Direct Testimony, at 4-5.

investment houses for his market risk premium to calculate indicated CAPM and ECAPM cost rates of 7.18% and 7.55%, respectively.[58]

Q. Do you have any general comments regarding Mr. Eastman's application of the CAPM and his indicated results?

A. Yes, I do. While I agree with Mr. Eastman's use of the ECAPM and 30-year Treasury bond yields in the CAPM, his indicated results of 7.18% and 7.55% are far removed from any reasonable measure of the ROE for a utility company. The unreasonableness of the results of Mr. Eastman's CAPM is due to his flawed inputs, which are mentioned briefly above, but will be discussed in detail below.

Q. Why should one use projected measures when determining the cost of capital?

A. One should use projected measures when measuring the cost of common equity because it, as well as ratemaking, is expectational in that it reflects investors' expectations of future capital markets, including an expectation of interest rate levels, as well as future risks. Ratemaking is prospective in that the rates set in this proceeding will be in effect for a period in the future. Even though Mr. Eastman exclusively relies on projected growth rates in his DCF analyses,[59] he fails to apply that logic to selecting an appropriate interest rate in his CAPM.

58 Eastman Direct Testimony, at 8-11.
59 Eastman Direct Testimony, at 5-6.

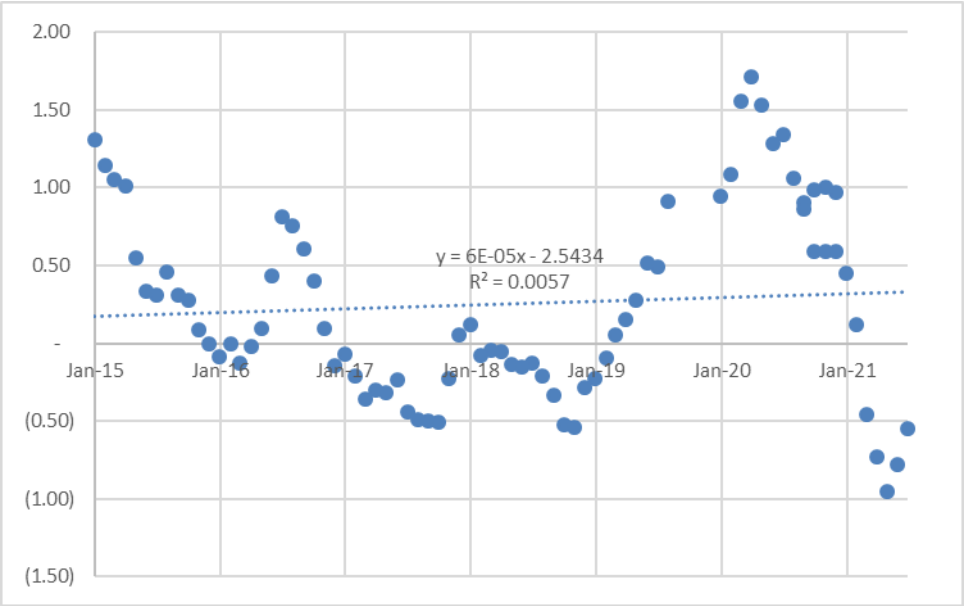
Q. On pages 14 through 16 of his direct testimony, Mr. Eastman criticizes your use of projected yields in the CAPM stating that "projections of yield and interest rates for the past decade have been inaccurate". Please comment.

A. First, as mentioned above, estimating the ROE is a forward-looking process. The critical issue is that the models reflect investors' *expectations,* not what actually happens. That is, the accuracy of the forecasts is less important, assuming the forecast source is a well-known, credible source relied upon by investors (which *Blue Chip* is). By failing to consider projected interest rates, Mr. Eastman has presumed investors do not consider forecasts from reliable sources such as *Blue Chip* in their expectations, without providing any evidence to support that judgment.

Q. Are current interest rates proven to be a better predictor of future interest rates?

A. No, they are not. In Chart 3 (below) I compare actual monthly yields to the three-month yield average from 12 months prior. This chart demonstrates that current Treasury yields have not been accurate predictors of future yields. Those results make intuitive sense. With the recent market dislocation, Treasury yields have decreased significantly and have been volatile. As interest rates decreased, historical Treasury yields over-projected current yields.

Chart 3: Forecast Error of Three-Month Average Treasury Yields[60]



Q. Please comment on Mr. Eastman's beta calculation.

A. Mr. Eastman calculates his beta coefficients using six-month daily prices for his proxy group vs the S&P 500. He then performs an adjustment using the "Bloomberg Method".[61]

Q. Do you agree with Mr. Eastman's calculated Beta coefficients?

A. No, I do not. Mr. Eastman's calculation of beta coefficients is not readily available to investors, and therefore, not relevant to the investor-required return. The importance of using readily available information in an ROE analysis is a key tenet of the EMH, which has been discussed previously. The relevance of the EMH as it relates to Mr. Eastman's calculated beta coefficients is that they are not readily available to investors, and therefore, not considered by them in calculating their required returns. As such, they should be discarded by the Commission in this proceeding.

60 Source: Federal Reserve Schedule H.15.
61 Eastman Direct Testimony, at 11. *See also*, OCA Statement 2, Exhibit NDE-3.

Q. How are Bloomberg Financial Services ("Bloomberg") betas calculated?

A. Bloomberg betas are calculated using weekly returns of a stock relative to the weekly returns of the S&P 500 over a time period of two years.

Q. Are you aware of a widely available published beta that uses daily return data for its calculation of beta?

A. No, I am not.

Q. Are you aware of a widely available published beta that uses a time horizon of six months for its calculation of beta?

A. No, I am not.

Q. What is your conclusion regarding Mr. Eastman's calculated betas?

A. Mr. Eastman's beta calculation is not based on commonly calculated betas in terms of return data (*e.g.,* weekly, monthly) or in terms of time horizon (*e.g.,* two years, five years). This, in addition to Mr. Eastman's calculated betas not being widely available to investors, leads me to conclude that Mr. Eastman's betas provide little value to his CAPM analysis and he should instead use widely published beta values from *Value Line* and Bloomberg.

Q. Please describe Mr. Eastman's determination of the market risk premium component of the CAPM.

A. Mr. Eastman considers investment professionals' expected returns which ranged from 4.10% to 7.20% per year, ultimately selecting an expected market risk premium of 6.50%.[62] Mr. Eastman looks to the long-term historical geometric mean market risk premium from 1928-2020 of 5.00% as a check on his recommended market risk premium.

62 Eastman Direct Testimony, at 10.

Q. Are expected returns by investment houses equivalent to required returns?

A. No, they are not. Expected returns from pension funds or investment houses are not the same as the ROE (otherwise known as required returns). Expected returns from pension funds or investment houses are expecting what the particular utility's earned return will be. For example, a benefit plan asset manager will match the **expected returns** available from various asset classes to the expected liabilities that must be funded. An investor seeking to maximize their risk-adjusted return will only invest in a security if the expected return is equal to or greater than the **required return**. Because expected returns may or may not equal required returns, we should not assume pension funding assumptions (that is, expected returns) may be viewed as a measure of investors' required returns.

Benefit plan managers develop asset allocation and investment decisions based on expected risks and returns for various asset classes, and are subject to the investment objective, or expected timing and nature, of the liabilities being funded by those investments. In the U.S., they must consider: 1) the diversification of the portfolio; 2) the liquidity and current return of the portfolio relative to the expected cash flow requirements under the plan; 3) the portfolio's projected return relative to the plan's funding objective; and 4) the return expected on alternative investments with similar risks.[63] Pension asset managers, therefore, are concerned with investing funds at an expected return to meet expected liabilities.

Widely used finance texts recommend the use of multiple models in estimating the cost of equity, in particular the DCF, CAPM, and risk premium

63 29 CFR 2509.908-1, Interpretive Bulletin Relating to Investing in Economically Targeted Investments, October 17, 2008.

model. To determine whether the use of broad market expected returns for the purposes of pension asset management also is an approach recommended by finance texts, I reviewed articles published in financial journals, as well as additional texts that speak to the methods used by analysts to estimate the cost of equity. An article published in Financial Analysts Journal surveyed financial analysts to determine the analytical techniques that are used in practice.[64] Regarding stock price valuation and cost of capital estimation, the author asked respondents to comment only on the DCF, CAPM, and Economic Value-Added models. Nowhere in that article did the author consider asking whether surveys of expected returns or pension fund assumptions are relevant to the determination of the ROE, the subject of this proceeding.

Q. Is the use of geometric mean risk premiums appropriate for cost of capital purposes?

A. No. Only arithmetic mean return rates are appropriate for cost of capital purposes because *ex-post* (historical) total returns and ERPs differ in size and direction over time, indicating volatility, *i.e.,* variance or risk. The arithmetic mean captures the prospect for variance in returns and ERPs, providing the valuable insight needed by investors in estimating risk in the *future* when making a *current* investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. The geometric mean of ex-post ERPs provides no insight into the potential variance of future returns because the geometric mean relates the change over many time periods to a constant rate of

64 Stanley B. Block, "A Study of Financial Analysts: Practice and Theory", *Financial Analysts Journal*, July/August, 1999.

change, rather than the year-to-year fluctuations, or variance, *critical to risk analysis.* Therefore, the geometric mean is of little to no value to investors seeking to measure risk. Moreover, from a statistical perspective, since stock returns and ERPs are randomly generated, the arithmetic mean is expectational and consistent with the prospective nature of the cost of capital and ratemaking noted above.

The financial literature is quite clear that risk is measured by the variability of expected returns, *i.e.,* the probability distribution of returns.[65] Duff & Phelps 2021 SBBI® Yearbook Stocks, Bonds, Bills and Inflation ("SBBI-2021")[66] explains in detail why the arithmetic mean is the correct mean to use when estimating the cost of capital.

In addition, Weston and Brigham provide the standard financial textbook definition of the riskiness of an asset when they state:

> The riskiness of an asset is defined in terms of the likely variability of future returns from the asset. (emphasis added)[67]

Furthermore, Morin states:

> The geometric mean answers the question of what constant return you would have had to achieve in each year to have your investment growth match the return achieved by the stock market. The arithmetic mean answers the question of what growth rate is the best estimate of the future amount of money that will be produced by continually reinvesting in the stock market. It is the rate of return which, compounded over multiple periods, gives the mean of the probability distribution of ending wealth. (emphasis added)[68]

In addition, Brealey and Myers note:

The proper uses of arithmetic and compound rates of return from

65 Eugene F. Brigham, Fundamentals of Financial Management, (The Dryden Press, 1989), at 639.
66 SBBI-2021, at p. 10-22.
67 J. Fred Weston and Eugene F. Brigham, Essentials of Managerial Finance, 3rd Edition (The Dryden Press, 1974), at 272.
68 Morin, at 133.

> past investments are often misunderstood... Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments... *Moral*: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return. (italics in original)[69]

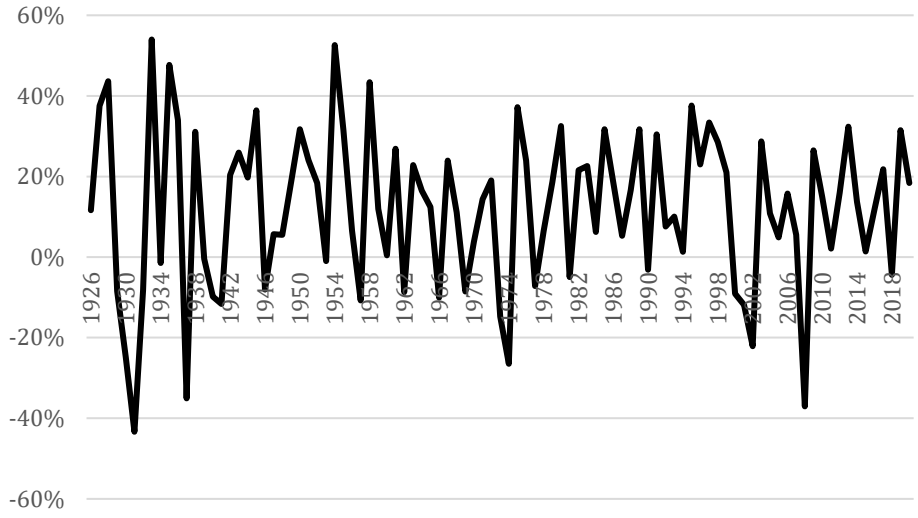
As previously discussed, investors gain insight into relative riskiness by analyzing expected *future* variability. This is accomplished using the arithmetic mean of a random distribution of returns/premiums. Only the arithmetic mean considers all the returns/premiums over a period of time, hence, providing meaningful insight into the variance and standard deviation of those returns/premiums.

Q. Can it be demonstrated that the arithmetic mean takes into account all of the returns and, therefore, is the only appropriate mean to use when estimating the cost of equity?

A. Yes. Pages 1 and 2 of Schedule DWD-8R graphically demonstrate this. Page 1 charts the SBBI-2021 returns on large company stocks for each and every year from 1926 through 2020. It is clear from looking at the year-to-year variation of these returns that stock market returns and, hence, market risk premiums vary (see Chart 4, below).

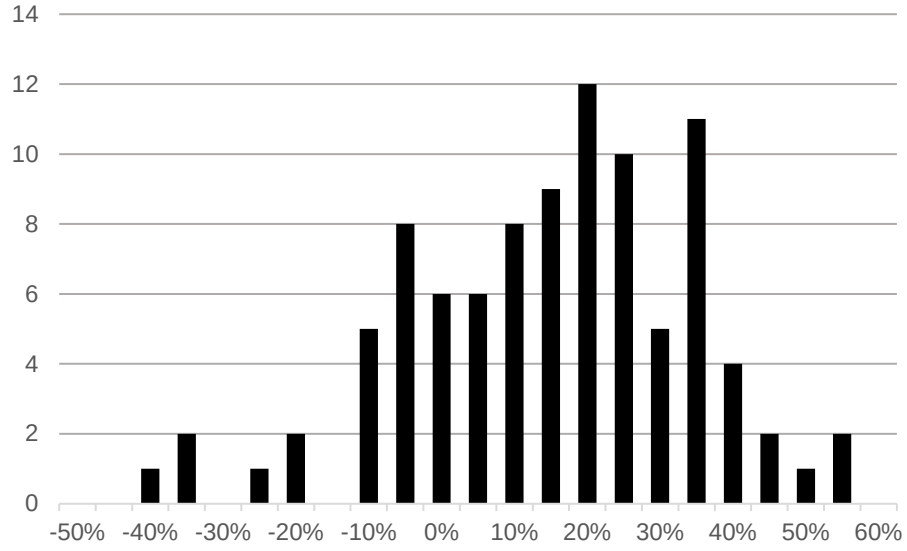
69 Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, 5th Ed. (McGraw-Hill Publications, Inc., 1996), at 146 – 147.

Chart 4: U.S. Large Company Stock Returns 1926-2020[70]



The distribution of each of those returns for the period from 1926 through 2020 is shown in Chart 5 below and on page 2 of Schedule DWD-8R.

Chart 5: Frequency Distribution of Observed Market Returns, 1926 - 2020[71]



There is a clear bell-shaped pattern to the probability distribution of returns, an indication that they are randomly generated and not serially correlated. The

70 SBBI-2021 at Appendix A-1.
71 Schedule DWD-7R, at 2.

arithmetic mean of this distribution of returns considers each and every return in the distribution. In doing so, the arithmetic mean takes into account the standard deviation or likely variance which may be experienced in the future when estimating the rate of return based on such historical returns.

In contrast, the geometric mean considers only two of the returns, the initial and terminal years, which, in this case, are 1926 and 2020. Based on only those two years, a constant rate of return is calculated by the geometric average. That constant return is graphically represented by a flat line, showing no year-to-year variation, for the entire 1926 to 2020 time period. This is obviously unrealistic, based on the histogram shown in Chart 5 above. In view of the foregoing, Mr. Eastman should have exclusively relied on the long-term arithmetic average return on the market in calculating his historical risk premium.

Q. What are your conclusions regarding Mr. Eastman's application of the CAPM?

A. Mr. Eastman's indicated CAPM and ECAPM results of 7.18% and 7.55%, respectively, are unreasonable on their face. Ultimately, Mr. Eastman does not consider the results in his recommendation and I suggest the Commission does the same.

B. <u>FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE</u>

Q. Does Mr. Eastman make a specific adjustment to reflect the smaller size of the Company relative to his proxy group?

A. No, He does not. As discussed previously in this Rebuttal Testimony, the increased risk based on the Company's size relative to the proxy group needs to be reflected in the ROE authorized for CUPA in this proceeding.

C. RESPONSE TO MR. EASTMAN'S CRITICISM OF MY DIRECT TESTIMONY

Q. Does Mr. Eastman have critiques of your Direct Testimony?

A. Yes. Mr. Eastman has the following critiques of my Direct Testimony: 1) that I gave weight to models other than the DCF model in my recommended ROE; 2) that I used forecasted interest rates in my analyses; 3) that I used arithmetic returns in calculating equity risk premiums; and 4) that I considered CUPA's small size relative to my Utility Proxy Group, all of which have been addressed previously in this Rebuttal Testimony.

VI. CONCLUSION

Q. Please summarize your Rebuttal Testimony.

A. In this Rebuttal Testimony, I updated my ROE models with market data as of August 13, 2021. The results of the ROE models produced an indicated range of ROEs from 9.17% to 12.42%. Given the updated results, I maintain my initial recommendation of 10.35%, which, in light of current capital markets, is reasonable, if not conservative.

Regarding the Opposing Witnesses' direct testimonies, I discussed my disagreements with their analyses, which I supported with citations to the academic literature and empirical analyses. I also responded to any critiques to my Direct Testimony, again, supporting my responses with citations to the academic literature and empirical analyses.

Q. Should any or all of the arguments made by the Opposing Witnesses persuade the Commission to lower the ROE it approves for the Company below your recommendation?

A. No, they should not. A weighted average cost of capital of 7.58% and an ROE of 10.35% are both reasonable and conservative. It will provide the Company with sufficient earnings to enable them to attract necessary new capital efficiently and at a reasonable cost, to the benefit of both customers and investors.

Q. Does this conclude your Rebuttal Testimony?

A. Yes.

CUPA Statement No. 5-R

Schedules DWD-1R through DWD-8R

Community Utilities of Pennsylvania, Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at December 31, 2020

Type Of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	(1)	2.64%
Common Equity	47.68%	10.35%	(2)	4.93%
Total	100.00%			7.57%

Notes:

(1) Company-provided.
(2) From page 2 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Six Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	8.17%
2.	Risk Premium Model (RPM) (2)	11.09%
3.	Capital Asset Pricing Model (CAPM) (3)	11.14%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	11.42%
5.	Indicated Range of Common Equity Cost Rates before Adjustment for Unique Risk	8.17% - 11.42%
6.	Business Risk Adjustment (5)	1.00%
7.	Indicated Range of Common Equity Cost Rates after Adjustment	9.17% - 12.42%
8.	Recommended Common Equity Cost Rate	10.35%

Notes:
(1) From page 3 of this Schedule.
(2) From page 10 of this Schedule.
(3) From page 22 of this Schedule.
(4) From page 27 of this Schedule.
(5) Business risk adjustment to reflect CUPA's unique risk compared to the Utility Proxy Group as detailed in Mr. D'Ascendis' Direct Testimony.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Six Water Companies

Proxy Group of Six Water Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Yahoo! Finance Projected Five Year Growth in EPS	[5] Bloomberg Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth in EPS (3)	[7] Adjusted Dividend Yield (4)	[8] Indicated Common Equity Cost Rate (5)
American States Water Company	1.75 %	6.50 %	NA %	5.20 %	6.00 %	5.90 %	1.80 %	7.70 %
American Water Works Company, Inc.	1.48	8.50	8.10	8.60	9.40	8.65	1.54	10.19
California Water Service Group	1.56	6.50	NA	11.70	2.00	6.73	1.61	8.34
Middlesex Water Company	1.20	4.50	NA	2.70	NA	3.60	1.22	4.82
SJW Group	2.07	13.00	NA	7.00	8.00	9.33	2.17	11.50
York Water Company	1.55	6.50	NA	4.90	NA	5.70	1.59	7.29
							Average	8.31 %
							Median	8.02 %
							Average of Mean and Median	8.17 %

NA= Not Available

Notes:

(1) Indicated dividend at 08/13/2021 divided by the average closing price of the last 60 trading days ending 08/13/2021 for each company.
(2) From pages 4 through 9 of this Schedule.
(3) Average of columns 2 through 5 excluding negative growth rates.
(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Company, 1.75% x (1+(1/2 x 5.90%)) = 1.80%.
(5) Column [6] + Column [7].

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 08/13/2021
www.yahoo.com Downloaded on 08/13/2021
Bloomberg Professional Services

AMER. STATES WATER NYSE-AWR

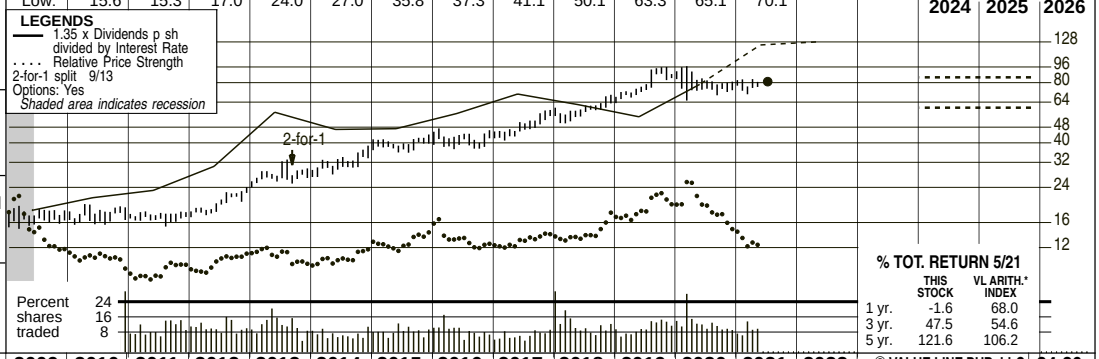
RECENT PRICE 81.01 | P/E RATIO 33.1 (Trailing: 32.8 Median: 24.0) | RELATIVE P/E RATIO 1.61 | DIV'D YLD 1.8% | VALUE LINE

TIMELINESS 3 Raised 3/5/21
SAFETY 2 Raised 7/20/12
TECHNICAL 4 Raised 7/9/21
BETA .65 (1.00 = Market)

High:	19.8	18.2	24.1	33.1	38.7	44.1	47.2	58.4	69.6	96.0	96.6	83.8
Low:	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1	63.3	65.1	70.1

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.35 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 9/13
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$69-$115	$92 (15%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	85	(+5%)	3%
Low	60	(-25%)	-4%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	121	121	120
to Sell	135	142	128
Hld's(000)	25731	25483	25737

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-1.6	68.0
3 yr.	47.5	54.6
5 yr.	121.6	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	13.24	*13.55*	*13.75*	Revenues per sh	*17.20*
1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	3.34	*3.50*	*3.75*	"Cash Flow" per sh	*4.80*
.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	2.33	*2.45*	*2.55*	Earnings per sh A	*3.05*
.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	1.28	*1.40*	*1.52*	Div'd Decl'd per sh B■	*2.00*
2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	3.54	*4.05*	*4.20*	Cap'l Spending per sh	*4.25*
7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	17.39	*17.45*	*20.00*	Book Value per sh D	*23.20*
33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	36.89	*37.25*	*37.50*	Common Shs Outst'g C	*37.50*
21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	34.3	*Bold figures are*		Avg Ann'l P/E Ratio	*24.0*
1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.83	1.78	*Value Line*		Relative P/E Ratio	*1.35*
3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.8%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $569.7 mill. **Due in 5 Yrs** $136.0 mill.
LT Debt $569.3 mill. **LT Interest** $25.2 mill.
(47% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.6 mill.
Pension Assets-12/20 $213.1 mill.
Oblig. $272.8 mill.
Pfd Stock None

Common Stock 36,913,017 shs.
as of 4/30/21

MARKET CAP: $3.0 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
419.3	466.9	472.1	465.8	458.6	436.1	440.6	436.8	473.9	488.2	*505*	*515*	Revenues ($mill)	*645*
42.0	54.1	62.7	61.1	60.5	59.7	69.4	63.9	84.3	86.4	*90.0*	*95.0*	Net Profit ($mill)	*115*
41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	24.6%	*23.5%*	*24.0%*	Income Tax Rate	*23.0%*
2.0%	2.5%	- -	- -	- -	- -	- -	- -	2.5%	- -	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	47.2%	*45.5%*	*48.5%*	Long-Term Debt Ratio	*53.5%*
54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	52.8%	*54.5%*	*51.5%*	Common Equity Ratio	*46.5%*
749.1	787.0	818.4	832.6	791.5	815.3	854.9	938.4	1082.5	1216.2	*1260*	*1390*	Total Capital ($mill)	*1620*
896.5	917.8	981.5	1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	1512.0	*1600*	*1700*	Net Plant ($mill)	*1925*
7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	8.0%	*8.0%*	*8.0%*	Return on Total Cap'l	*8.5%*
10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	*13.5%*	*13.5%*	Return on Shr. Equity	*13.0%*
10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	*13.5%*	*13.5%*	Return on Com Equity	*13.0%*
5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	6.1%	*6.0%*	*5.5%*	Retained to Com Eq	*4.5%*
49%	45%	47%	53%	54%	56%	52%	61%	51%	55%	*57%*	*60%*	All Div'ds to Net Prof	*66%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	1.3	36.7	7.0
Accts Receivable	20.9	29.2	22.0
Other	100.3	91.2	89.9
Current Assets	122.5	157.1	118.9
Accts Payable	55.6	63.8	57.4
Debt Due	5.3	.4	.4
Other	55.1	54.4	55.2
Current Liab.	116.0	118.6	113.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.5%	.5%	*5.0%*
"Cash Flow"	5.5%	3.0%	*7.0%*
Earnings	9.0%	5.5%	*6.5%*
Dividends	8.5%	7.5%	*9.5%*
Book Value	5.5%	5.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.7	134.5	113.0	473.9
2020	109.1	121.3	133.6	124.2	488.2
2021	117.1	*122.9*	*140*	*125*	*505*
2022	*118*	*127*	*143*	*127*	*515*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.29	.44	.62	.37	1.72
2019	.35	.72	.76	.45	2.28
2020	.38	.69	.72	.54	2.33
2021	.52	*.69*	*.74*	*.50*	*2.45*
2022	*.48*	*.72*	*.78*	*.57*	*2.55*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.242	.242	.255	.255	.99
2018	.255	.255	.275	.275	1.06
2019	.275	.275	.305	.305	1.16
2020	.305	.305	.335	.335	1.28
2021	.335	.335			

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 261,976 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,545 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 841. BlackRock, Inc. owns 16.4% of out. shares; Vanguard, 12.0%; off. & dir. 1.0%. (4/21 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water had a strong first quarter. Share earnings of $0.52 were well above our $0.45 estimate and last year's $0.38. The company showed solid growth across the board, as its three main operations posted substantial year-over-year gains. Income increased 38%, 50%, and 17%, respectively, in the Water, Contracted Services, and Electric businesses.

Earnings comparisons will likely be flattish over the remainder of the year, however. Higher rates that went into effect in January are helping, but the fact that many utilities do not perform well in the final year of their previous rate rulings is not unusual. Also, the recent spike in inflation ought to drive up expenses to a greater degree than was anticipated. All told, due mostly to the positive March-interim results, we think American States share net can still improve 5%, to $2.45.

Profits in 2022 depend, to some degree, on a pending rate case. In California, utilities petition state regulators (the CPUC) for rate relief triennially. The utility filed for increased rates for 2022 to 2024 in July of 2020. We would not be surprised if there was a delay in a ruling, as the CPUC may want to see if the recent spike in costs is transitional, or higher prices are more permanent. On the positive side, the CPUC has been relatively reasonable in the recent past, as it understands that significant investment must be made to upgrade the state's water infrastructure. Assuming fair treatment, share earnings should rise 4% next year.

The Construction Services operations could spur future growth. This segment builds and operates water systems on military bases throughout the country. Returns here are generally higher as the market, not regulators, sets the rates. The company has been successful in wining its fair share of bids for the privatization of water operations on military bases. As the program expands, there should be ample opportunities for new business.

These shares are not very attractive at the recent quotation. They carry an average rank for year-ahead performance. Moreover, long-term total return potential is well below the *Value Line* median.

James A. Flood *July 9, 2021*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due early Aug.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 12/31/20; $1.2 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	90

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AMERICAN WATER NYSE-AWK

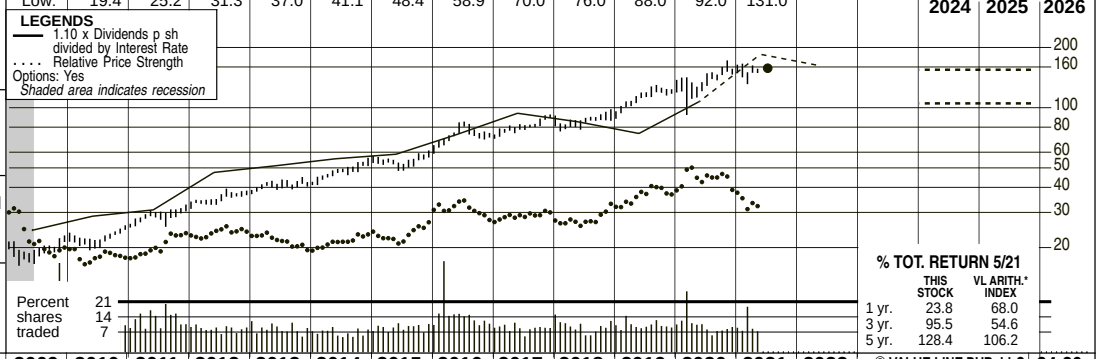
RECENT PRICE **157.33** | P/E RATIO **37.0** (Trailing: 39.7 Median: 24.0) | RELATIVE P/E RATIO **1.80** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 3 Lowered 6/25/21
SAFETY 3 New 7/25/08
TECHNICAL 4 Lowered 6/18/21
BETA .85 (1.00 = Market)

High:	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	98.2	129.9	172.6	166.1	
Low:	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0	88.0	92.0	131.0	

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$112-$258	$185 (20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	155	(Nil)	2%
Low	105	(-35%)	-7%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	401	449	434
to Sell	337	344	388
Hld's(000)	150689	148917	148561

Percent shares traded 21 14 7

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	23.8	68.0
3 yr.	95.5	54.6
5 yr.	128.4	106.2

2005	2006E	2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
- -	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	20.83	*22.10*	*23.30*	Revenues per sh	*25.80*
- -	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	7.24	*7.70*	*8.25*	"Cash Flow" per sh	*9.70*
- -	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	3.43	3.91	*4.25*	*4.60*	Earnings per sh A	*5.50*
- -	- -	- -	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	2.15	*2.36*	*2.57*	Div'd Decl'd per sh B■	*3.10*
- -	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	10.05	*10.80*	*12.60*	Cap'l Spending per sh	*11.75*
- -	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	35.58	*37.95*	*40.20*	Book Value per sh D	*50.00*
- -	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	181.30	*181.50*	*182.00*	Common Shs Outst'g C	*190.00*
- -	- -	- -	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	35.3	*Bold figures are*		Avg Ann'l P/E Ratio	*23.5*
- -	- -	- -	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.75	1.83	*Value Line*		Relative P/E Ratio	*1.30*
- -	- -	- -	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $10751 mil. **Due in 5 Yrs** $2867 mil.
LT Debt $9325 mil. **LT Interest** $384 mil.
(59% of Cap'l)

Leases, Uncapitalized: Annual rentals $13.0 mill.
Pension Assets 12/20 $1990.0 mill
Oblig. $2386.0 mill.
Pfd Stock $3.0 mill. **Pfd Div'd** $.2 mill

Common Stock 181,469,196 shares
as of 4/27/21

MARKET CAP: $28.6 billion (Large Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	3777.0	*4025*	*4240*	Revenues ($mill)	*4900*
304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0	621.0	709.0	*770*	*835*	Net Profit ($mill)	*1045*
39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	23.3%	*22.5%*	*23.5%*	Income Tax Rate	*24.0%*
- -	6.2%	5.1%	- -	- -	- -	- -	- -	5.1%	4.0%	*4.5%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	59.1%	*59.0%*	*61.5%*	Long-Term Debt Ratio	*61.0%*
44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	40.9%	*41.0%*	*39.5%*	Common Equity Ratio	*39.0%*
9580.3	9635.5	9940.7	10364	10911	10967	11875	13433	14760	15787	*16900*	*18700*	Total Capital ($mill)	*20000*
11021	11739	12391	12900	13933	14992	16246	17409	18232	19710	*20750*	*22150*	Net Plant ($mill)	*24500*
4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	5.7%	*5.5%*	*5.5%*	Return on Total Cap'l	*6.0%*
7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	*11.0%*	*11.5%*	Return on Shr. Equity	*11.0%*
7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	*11.0%*	*11.5%*	Return on Com Equity	*11.0%*
3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	5.0%	*5.0%*	*5.5%*	Retained to Com Eq	*4.5%*
52%	57%	40%	50%	50%	56%	68%	56%	57%	55%	*56%*	*56%*	All Div'ds to Net Prof	*56%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	91	576	99
Accts Receivable	294	321	274
Other	900	1009	1093
Current Assets	1285	1906	1466
Accts Payable	203	189	134
Debt Due	814	1611	1426
Other	1028	1081	891
Current Liab.	2045	2881	2451

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	3.5%	*4.5%*
"Cash Flow"	8.0%	7.0%	*6.5%*
Earnings	10.5%	8.0%	*8.5%*
Dividends	11.0%	11.5%	*8.5%*
Book Value	3.5%	4.5%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	761	853	976	850	3440
2019	813	882	1013	902	3610
2020	844	931	1079	923	3777
2021	888	*1002*	*1160*	*975*	*4025*
2022	*935*	*1055*	*1200*	*1050*	*4240*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.59	.91	1.03	.62	3.15
2019	.62	.94	1.33	.54	3.43
2020	.68	.97	1.46	.80	3.91
2021	.73	*1.07*	*1.58*	*.87*	*4.25*
2022	*.80*	*1.15*	*1.70*	*.95*	*4.60*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.375	.415	.415	.415	1.62
2018	.415	.455	.455	.455	1.78
2019	.455	.50	.50	.50	1.96
2020	.50	.55	.55	.55	2.15
2021	.55	.6025			

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to approximately 15 million people in 46 states. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86% of 2020 revenues. New Jersey is its largest market accounting for 24.5% of regulated revenues; Pennsylvania, 22.5%; Missouri, 10.6%. Has 6,800 employees. The Vanguard Grp, owns 11.7% of outstanding shares; BlackRock, Inc., 8.1%; officers & directors, less than 1.0%. (3/21 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works should continue to post solid earnings gains. In the first quarter, its share net rose 7%, on a year-over-year basis. This came despite coronavirus-related costs and the suspension of service disconnections for nonpaying accounts. The utility ought to eventually recover these funds through higher rates, however. In any case, thanks to its acquisition policy (more below), we are maintaining our share-net estimate of $4.25 for 2021, a 9% increase compared to 2020. We look for the bottom line to climb 8% next year, to $4.60, due to an expanding rate base and some rate relief.

The water utility has a straightforward strategy that has proven to be very successful. There are approximately 100,000 small municipally-run water utilities in the United States. Thus, there exists a tremendous amount of inefficiencies in the industry. Expense margins can often be improved substantially when acquisitions are made. American Water Works ought to continue to purchase many smaller water districts. In 2021, there have already been several made, the largest being the York City Sewer Authority for $235 million.

The construction budget remains large. As is the case for almost all water utilities, American Water Works is spending heavily to upgrade its pipeline and wastewater assets. We estimate that the capital budget will average between $2.2 billion to $$2.5 billion annually for the next 10 years.

Finances are sound. Despite the vast building program, the company has managed to maintain a solid balance sheet. Because of reasonable regulatory treatment, it earns a fair return on investments made to modernize its infrastructure. This has been accomplished with very little dilution, as shares outstanding have increased only 3% over the past decade.

These neutrally ranked shares offer below-average long-term total return potential. The stock, which used to have defensive characteristics, has outperformed the key market indexes over the past five years. Hence, the equity is trading above the upper level of our 2024-2026 projected Target Price Range.

James A. Flood *July 9, 2021*

(A) Diluted earnings. Excludes nonrecur. losses: '08, $4.62; '09, $2.63; '11, $0.07. Disc. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due early Aug. **(B)** Dividends paid in March, June, September, and December. ■ Div. reinvestment available. **(C)** In millions. **(D)** Includes intangibles. On 3/31/21: $1.563 billion, $8.61/share. **(E)** Pro forma numbers for '06 & '07.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	90

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CALIFORNIA WATER NYSE-CWT

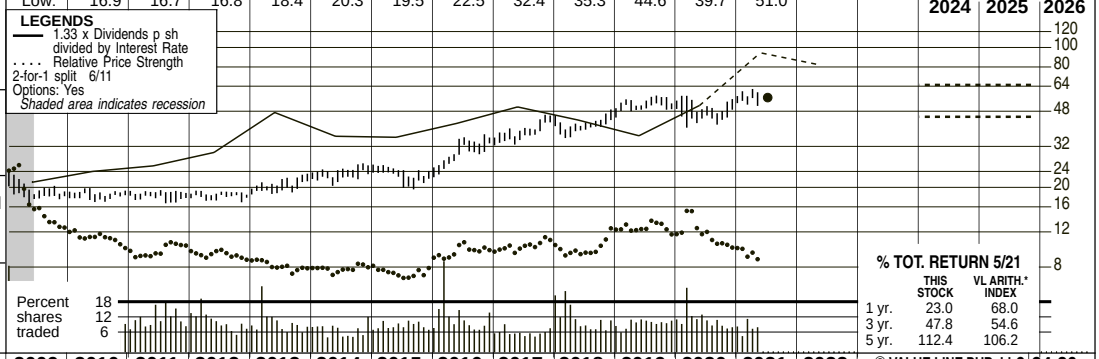
RECENT PRICE 56.22 | P/E RATIO 33.1 (Trailing: 24.4 Median: 24.0) | RELATIVE P/E RATIO 1.61 | DIV'D YLD 1.6% | VALUE LINE

TIMELINESS 3 Lowered 5/28/21
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Lowered 6/25/21
BETA .65 (1.00 = Market)

High:	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	57.4	62.0
Low:	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6	39.7	51.0

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 6/11
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$45-$83	$64 (15%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+15%)	6%
Low	45	(-20%)	-3%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	101	122	112
to Sell	106	91	104
Hld's(000)	36492	37534	38005

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	23.0	68.0
3 yr.	47.8	54.6
5 yr.	112.4	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	14.72	15.78	*15.70*	*15.95*	Revenues per sh	*16.30*
1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	3.14	3.88	*3.25*	*3.55*	"Cash Flow" per sh	*3.75*
.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	1.97	*1.70*	*2.00*	Earnings per sh A	*2.25*
.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	.85	*.92*	*.98*	Div'd Decl'd per sh B ■	*1.15*
2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	5.64	5.93	*5.25*	*5.50*	Cap'l Spending per sh	*5.85*
7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	15.19	16.07	18.30	*18.35*	*18.25*	Book Value per sh C	*19.80*
36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	50.33	*51.00*	*52.00*	Common Shs Outst'g D	*53.00*
24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	39.3	24.9	*Bold figures are*		Avg Ann'l P/E Ratio	*24.0*
1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64	2.09	1.29	*Value Line*		Relative P/E Ratio	*1.30*
3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%	1.5%	1.7%	*estimates*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $1221.1 mill. **Due in 5 Yrs** $357.0 mill.
LT Debt $781.0 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 2.9x) (46% of Cap'l)

Pension Assets-12/20 $716.8 mill. **Oblig.** $833.9 mill.

Pfd Stock None

Common Stock 50,835,000 shs.

MARKET CAP: $2.9 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
501.8	560.0	584.1	597.5	588.4	609.4	666.9	698.2	714.6	794.3	*800*	*830*	Revenues ($mill) E	*865*
36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	63.1	96.8	*87.0*	*105*	Net Profit ($mill)	*120*
40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	11.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	3.3%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	45.9%	*44.5%*	*43.5%*	Long-Term Debt Ratio	*38.0%*
48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	54.1%	*55.5%*	*56.5%*	Common Equity Ratio	*62.0%*
931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	1702.4	*1685*	*1675*	Total Capital ($mill)	*1700*
1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	2650.6	*2675*	*2700*	Net Plant ($mill)	*2850*
5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	7.0%	*6.0%*	*7.0%*	Return on Total Cap'l	*8.0%*
8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	*9.5%*	*11.0%*	Return on Shr. Equity	*11.5%*
8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	*9.5%*	*11.0%*	Return on Com Equity	*11.5%*
2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	6.0%	*4.0%*	*5.5%*	Retained to Com Eq	*5.5%*
71%	62%	56%	55%	71%	68%	51%	55%	60%	43%	*54%*	*49%*	All Div'ds to Net Prof	*51%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	42.7	44.6	84.4
Other	142.0	221.4	218.0
Current Assets	184.7	266.0	302.4
Accts Payable	108.5	131.7	120.5
Debt Due	197.0	375.1	440.1
Other	53.2	81.9	94.9
Current Liab.	358.7	588.7	655.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.5%	4.0%	*1.5%*
"Cash Flow"	6.0%	8.0%	*2.0%*
Earnings	5.0%	8.0%	*6.5%*
Dividends	3.0%	4.0%	*6.5%*
Book Value	5.0%	5.0%	*3.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.)E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	134.6	174.9	221.3	167.4	698.2
2019	126.1	179.0	232.6	176.9	714.6
2020	125.6	175.5	304.1	189.1	794.3
2021	147.7	*200*	*250*	*202.3*	*800*
2022	*160*	*205*	*260*	*205*	*830*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	d.02	.31	.75	.32	1.36
2019	d.16	.35	.88	.24	1.31
2020	d.42	.11	1.94	.31	1.97
2021	d.06	*.40*	*.95*	*.41*	*1.70*
2022	*.10*	*.45*	*1.00*	*.45*	*2.00*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.18	.18	.18	.18	.72
2018	.1875	.1875	.1875	.1875	.75
2019	.1975	.1975	.1975	.1975	.79
2020	.2125	.2125	.2125	.2125	.85
2021	.230	.230			

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 492,600 customers in 100 communities in the state of California. Accounts for about 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '20: residential, 70%; business, 18%; industrial, 4%; public authorities, 5%; other 3%. Off. and dir. own 1% of common stock (4/21 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

California Water is in a much better position after raising its customers' prices associated with its December, 2020 regulatory rate case approval. The March period represented a full quarter of cumulative rate hikes post the regulatory decision. This prompted an 18% year-over-year advance in revenues, to about $148 million. In addition, compared to the previous-year figure, the top-line boost helped the company deliver a slimmer first-quarter share deficit of $0.06, although higher operating expenses kept California Water from turning a profit. For the current year, we now look for earnings of $1.70 a share, down from our previous call of $1.90.

The company's subsidiary, Hawaii Water Service, tabbed another acquisition. Subject to customary closing conditions and approval from the Hawaii Public Utilities Commission, Hawaii Water has agreed to acquire the assets of HOH Utilities Company, a wastewater utility that serves approximately 1,800 residential and resort customers. The deal (financial details were not disclosed) comes on the heels of several notable asset purchases earlier this year. To wit, we envision a consistent stream of bolt-on acquisitions going forward.

Infrastructure upgrades are in full swing, and ought to be par for the course over the pull to mid-decade. As previously noted, management has embarked on a significant multiyear upgrade program to overhaul its aging service pipelines and wastewater treatment facilities. Indeed, future rate case filings are apt to include requests for additional rate hikes to recoup the company's aggressive intermediate- to long-term spending initiatives.

The equity has slipped two spots on our Timeliness Ranking System, to 3 (Average). California Water shares are trading around levels seen three months prior subsequent to etching an all-time high in late April. All told, we suggest near-term subscribers press on the brakes. Moreover, total return potential three to five years hence is nothing to write home about. Thus, investors with an eye to 2024-2026 would also be wise to hold off on making a capital commitment, for now.

Nicholas P. Patrikis *July 9, 2021*

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4¢. Next earnings report due early August.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '20 : $27.6 mill., $0.55/sh.
(D) In millions, adjusted for split.
(E) Excludes non-regulated revenues

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	65

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MIDDLESEX WATER NDQ-MSEX

RECENT PRICE **83.74** | P/E RATIO **38.1** (Trailing: 39.3 Median: 23.0) | RELATIVE P/E RATIO **1.86** | DIV'D YLD **1.3%** | VALUE LINE

TIMELINESS 3 Lowered 6/4/21
SAFETY 2 New 10/21/11
TECHNICAL 4 Raised 7/9/21
BETA .70 (1.00 = Market)

High:	19.3	19.4	19.6	22.5	23.7	28.0	44.5	46.7	60.3	67.7	76.1	88.6
Low:	14.7	16.5	17.5	18.6	19.1	21.2	25.0	32.2	34.0	51.0	48.8	67.1

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.20 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$64-$116	$90 (5%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(-10%)	-1%
Low	55	(-35%)	-8%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	52	67	64
to Sell	69	49	67
Hld's(000)	10357	10675	10712

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	28.5	68.0
3 yr.	102.3	54.6
5 yr.	154.6	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	8.10	*8.45*	*8.70*	Revenues per sh	*9.15*
1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	2.90	3.25	*3.10*	*3.25*	"Cash Flow" per sh	*3.70*
.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	2.18	*2.20*	*2.35*	Earnings per sh A	*2.70*
.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	1.04	*1.10*	*1.15*	Div'd Decl'd per sh B■	*1.35*
2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	5.11	6.04	*5.50*	*5.50*	Cap'l Spending per sh	*6.25*
8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	18.57	19.81	*19.45*	*19.60*	Book Value per sh	*20.85*
11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	17.43	17.47	*17.75*	*17.85*	Common Shs Outst'g C	*18.00*
27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	29.7	30.1	*Bold figures are*		Avg Ann'l P/E Ratio	*24.0*
1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.58	1.56	*Value Line*		Relative P/E Ratio	*1.30*
3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%	1.6%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $279.9 mill. **Due in 5 Yrs** $43.7 mill.
LT Debt $272.7 mill. **LT Interest** $7.5 mill.
(Total interest coverage: 7.3x)
(44% of Cap'l)

Pension Assets-12/20 $88.9 mill.
Oblig. $115.9 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.1 mill.

Common Stock 17,478,000 shs.
as of 4/30/20

MARKET CAP: $1.5 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
102.1	110.4	114.8	117.1	126.0	132.9	130.8	138.1	134.6	141.6	*150*	*155*	Revenues ($mill)	*165*
13.4	14.4	16.6	18.4	20.0	22.7	22.8	32.5	33.9	38.4	*39.0*	*42.0*	Net Profit ($mill)	*49.0*
32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	2.8%	2.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	3.9%	*2.5%*	*2.5%*	AFUDC % to Net Profit	*2.5%*
42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.8%	41.5%	44.0%	*42.5%*	*41.5%*	Long-Term Debt Ratio	*40.0%*
56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	61.6%	58.2%	55.7%	*57.0%*	*58.0%*	Common Equity Ratio	*60.0%*
312.5	316.5	321.4	335.8	345.4	355.4	370.7	404.1	556.7	621.5	*610*	*600*	Total Capital ($mill)	*630*
422.2	435.2	446.5	465.4	481.9	517.8	557.2	618.5	705.7	796.6	*800*	*815*	Net Plant ($mill)	*835*
5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	6.8%	*7.0%*	*7.5%*	Return on Total Cap'l	*8.0%*
7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	11.0%	*11.5%*	*12.0%*	Return on Shr. Equity	*13.0%*
7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	11.1%	*11.5%*	*12.0%*	Return on Com Equity	*13.0%*
1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.8%	7.0%	5.4%	5.8%	*5.5%*	*6.0%*	Retained to Com Eq	*6.5%*
87%	83%	73%	67%	63%	58%	62%	46%	48%	48%	*50%*	*49%*	All Div'ds to Net Prof	*50%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	2.2	4.5	4.4
Other	26.9	29.6	27.0
Current Assets	29.1	34.1	31.4
Accts Payable	23.3	30.4	24.4
Debt Due	27.2	9.3	7.2
Other	14.5	17.1	34.2
Current Liab.	65.0	56.8	65.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.0%	2.0%	*2.0%*
"Cash Flow"	7.5%	10.5%	*3.5%*
Earnings	9.0%	12.5%	*4.5%*
Dividends	3.0%	5.0%	*5.5%*
Book Value	5.5%	8.0%	*2.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	31.2	34.9	38.7	33.3	138.1
2019	30.7	33.4	37.8	32.7	134.6
2020	31.8	35.3	39.9	34.6	141.6
2021	32.5	*37.0*	*44.0*	*36.5*	*150*
2022	*34.0*	*38.0*	*45.0*	*38.0*	*155*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.27	.52	.74	.43	1.96
2019	.39	.49	.66	.46	2.01
2020	.44	.55	.72	.47	2.18
2021	.39	*.55*	*.73*	*.53*	*2.20*
2022	*.47*	*.57*	*.76*	*.55*	*2.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375	.22375	.24	.91
2019	.24	.24	.24	.2562	.98
2020	.2562	.2562	.2562	.2725	1.04
2021	.2725	.2725			

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2020, the Middlesex System accounted for 59% of operating revenues. At 12/31/20, the company had 348 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 2.0% of the com. stock; BlackRock Inst. Trust Co., 7.8% (4/21 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tel.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water delivered mixed results to start 2021. For the March period, revenues of $33 million, which were a slight uptick versus the previous-year figure, came in roughly on par with our expectation. Notably, the advance can be attributed to increased water demand in its New Jersey system, as well as customer growth in its Delaware system. On the other hand, earnings of $0.39 a share missed our mark by $0.06. Higher expenses associated with weather-related water main break activity during the winter months, along with increased labor costs due to wage hikes, weighed on profitability.

We are shaving a nickel off our current-year bottom-line estimate, to $2.20 a share. The downward revision stems mainly from the softer first-quarter showing, as we project relatively flat year-over-year share-profit comparisons until the December period. Looking further out, respectable share-net expansion is likely on tap for 2022.

Solid long-term business prospects are still intact, in our view. Middlesex is poised for moderate year-over-year revenue and earnings expansion over the pull to mid-decade. Indeed, the water utility's operations are largely noncyclical and, thus, ought to perform decently under various operating conditions. Additionally, its customer base should continue to widen (especially in its Delaware system), and residential/commerical water consumption levels may well rise in tandem with a healthier economic backdrop.

Investment appeal is limited at this juncture. The stock established a fresh high-water mark in early June, but has since cooled off a bit. Based on our Timeliness ranking scale, good-quality MSEX shares have been lowered two notches, to 3 (Average), thus no longer stand out for the year ahead. Moreover, its forward-looking 12-month price-to-earnings ratio is significantly stretched compared to historic norms, indicating that investors would need to pay a lofty premium at present to own the water utility. Likewise, subscribers with a three- to five-year investment horizon would be wise to defer commitments until a better entry point is available.

Nicholas P. Patrikis *July 9, 2021*

(A) Diluted earnings. Next earnings report due early August.
(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.
(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	85

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SJW GROUP NYSE-SJW

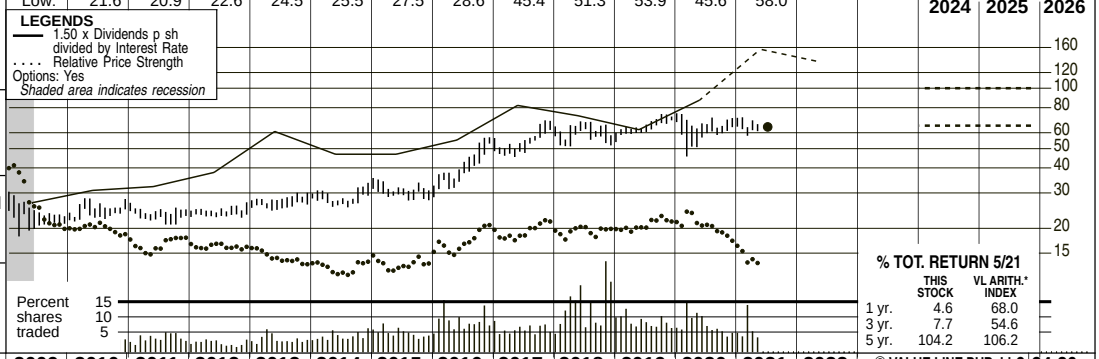
RECENT PRICE 64.13 | P/E RATIO 31.3 (Trailing: 29.8 Median: 21.0) | RELATIVE P/E RATIO 1.53 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 3 New 7/9/21
SAFETY 3 New 4/22/11
TECHNICAL 1 New 7/9/21
BETA .80 (1.00 = Market)

High:	28.2	26.8	26.9	30.1	33.7	35.7	56.9	69.3	68.4	74.5	75.0	71.7
Low:	21.6	20.9	22.6	24.5	25.5	27.5	28.6	45.4	51.3	53.9	45.6	58.0

Target Price Range
2024 | 2025 | 2026

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$52-$119	$86 (35%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	100	(+55%)	13%
Low	65	(Nil)	3%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	62	80	87
to Sell	77	68	73
Hld's(000)	19827	19850	20963

Percent shares traded 15 10 5

% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.6	68.0
3 yr.	7.7	54.6
5 yr.	104.2	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	14.78	19.77	*19.50*	*20.50*	Revenues per sh	*22.15*
2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.67	5.28	*3.70*	*4.30*	"Cash Flow" per sh	*5.30*
1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	1.35	2.14	*2.05*	*2.65*	Earnings per sh A	*3.65*
.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	1.28	*1.36*	*1.44*	Div'd Decl'd per sh B■	*1.72*
2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	7.44	*6.75*	*7.00*	Cap'l Spending per sh	*7.50*
10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	32.12	*35.00*	*36.65*	Book Value per sh	*40.85*
18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	28.56	*30.00*	*30.00*	Common Shs Outst'g C	*30.00*
19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	47.8	30.0	*Bold figures are*		Avg Ann'l P/E Ratio	*23.0*
1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	2.55	1.56	*Value Line*		Relative P/E Ratio	*1.30*
2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	2.0%	*estimates*		Avg Ann'l Div'd Yield	*2.1%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $1379.3 mill. **Due in 5 Yrs** $22.4 mill.
LT Debt $1303.0 mill. **LT Interest** $50.0 mill.
(LT Interest Coverage: 3.8x)
(58% of Cap'l)

Pension Assets-12/20 $278.1 mill.
Oblig. $386.1 mill.
Pfd Stock None.
Common Stock 29,790,000 shs.

MARKET CAP: $1.9 billion (Mid Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
239.0	261.5	276.9	319.7	305.1	339.7	389.2	397.7	420.5	564.5	*585*	*615*	Revenues ($mill)	*665*
20.9	22.3	23.5	51.8	37.9	52.8	59.2	38.8	38.7	61.5	*62.0*	*80.0*	Net Profit ($mill)	*110*
41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	36.7%	20.6%	25.3%	12.0%	*21.0%*	*21.5%*	Income Tax Rate	*21.0%*
--	--	--	--	--	--	--	--	2.0%	1.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	32.7%	59.1%	58.4%	*53.5%*	*51.0%*	Long-Term Debt Ratio	*38.0%*
43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	41.6%	*46.5%*	*49.0%*	Common Equity Ratio	*62.0%*
607.9	610.2	656.2	744.5	764.6	855.0	894.3	1320.7	2173.6	2204.7	*2250*	*2250*	Total Capital ($mill)	*1975*
756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	1328.8	2206.5	2334.9	*2450*	*2565*	Net Plant ($mill)	*2775*
4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	2.5%	4.0%	*3.5%*	*4.0%*	Return on Total Cap'l	*6.0%*
7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	6.7%	*6.0%*	*7.0%*	Return on Shr. Equity	*9.0%*
7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	6.7%	*6.0%*	*7.0%*	Return on Com Equity	*9.0%*
3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	.5%	2.7%	*2.0%*	*3.5%*	Retained to Com Eq	*4.5%*
61%	59%	62%	29%	42%	31%	36%	60%	88%	59%	*66%*	*54%*	All Div'ds to Net Prof	*47%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	17.9	9.3	14.5
Accts Receivable	36.3	58.1	55.7
Other	67.8	59.9	53.3
Current Assets	122.0	127.3	123.5
Accts Payable	34.9	34.2	25.6
Debt Due	22.3	76.2	76.3
Other	177.4	240.4	187.8
Current Liab.	234.6	350.8	289.7

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	2.0%	*5.5%*
"Cash Flow"	5.5%	2.0%	*4.5%*
Earnings	7.0%	-.5%	*13.0%*
Dividends	6.0%	10.0%	*6.0%*
Book Value	8.5%	12.5%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	75.0	99.1	124.9	98.7	397.7
2019	77.7	103.0	114.0	126.0	420.5
2020	115.8	147.2	165.9	135.6	564.5
2021	114.8	*150*	*175*	*145.2*	*585*
2022	*125*	*155*	*185*	*150*	*615*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.06	.62	.76	.38	1.82
2019	.21	.47	.33	.34	1.35
2020	.08	.69	.91	.46	2.14
2021	.09	*.56*	*.90*	*.50*	*2.05*
2022	*.18*	*.77*	*1.00*	*.70*	*2.65*

Cal-endar	QUARTERLY DIVIDENDS PAID BD■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28	.28	.28	1.12
2019	.30	.30	.30	.30	1.20
2020	.32	.32	.32	.32	1.28
2021	.34	.34			

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with a total population of 450,000 people. Has 361 employees. Officers and directors own 8.3% of outstanding shares (3/21 proxy). Chairman & CEO: Eric Thornburg. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

SJW Group unveiled rather tepid bottom-line guidance for 2021. Management recently forecasted earnings guidance between $1.85 and $2.05 a share, largely due to limited available surface water at its treatment plants as a result of insufficient rainfall. Reflecting on the March period, revenues and earnings were roughly flat on a year-over-year basis, as a slight decline in water consumption and weather-related one-time costs kept a lid on results.

Adding it all up, we are lowering our current-year share-profit forecast. We are shaving $0.50 from our 2021 net income projection, to $2.05 a share. To wit, our revised estimate falls in line with the upper end of leadership's target range. Looking toward 2022, we think earnings are poised to rebound strongly, supported by recently implemented customer rate hikes, as well as improved operating efficiencies.

The company acquired Clear Water Estates' water system in Texas during the period. The deal was valued at around $1 million, and is set to add 230 new service connections and increase the water supply for SJW's Texas operations. Further out, we would not be surprised to see SJW Group explore additional bolt-on acquisitions.

Business prospects out to 2024-2026 are bright, in our view. Residential water consumption ought to markedly accelerate amidst an improving economic backdrop. In addition, commercial water usage is poised to pick up considerably subsequent to the rollback of most of California's COVID-19 restrictions. All in all, the company's noncyclical operations are well positioned for sustainable growth over the long haul.

We are reinstating SJW Group's Timeliness rank at 3 (Average) and, thus expect the stock to be a market performer over the coming six to 12 months. The equity's long-term investment characteristics don't necessarily jump off the page, either. At the recent quotation, SJW shares offer merely average upside three to five years hence. Therefore, we think patient subscribers would be wise to wait for a more attractive entry point.

Nicholas P. Patrikis *July 9, 2021*

(A) Diluted earnings. Excludes nonrecurring losses: '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early August. Quarterly egs. may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions.
(D) Paid special dividend of $0.17 per share on 11/17.
(E) Suspended due to recent CTWS merger.

Company's Financial Strength	B+
Stock's Price Stability	80
Price Growth Persistence	65
Earnings Predictability	50

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YORK WATER NDQ-YORW

RECENT PRICE **46.56** | P/E RATIO **34.5** (Trailing: 37.5 Median: 28.0) | RELATIVE P/E RATIO **1.68** | DIV'D YLD **1.6%** | VALUE LINE

TIMELINESS 3 Lowered 1/15/21
SAFETY 3 Lowered 7/17/15
TECHNICAL 4 Lowered 6/18/21
BETA .85 (1.00 = Market)

High:	18.0	18.1	18.5	22.0	24.3	26.7	39.8	39.9	36.1	47.3	51.3	53.0
Low:	12.8	15.8	16.8	17.6	18.8	19.7	23.8	31.7	27.5	30.3	34.6	40.7

Target Price Range
2024 | 2025 | 2026

18-Month Target Price Range

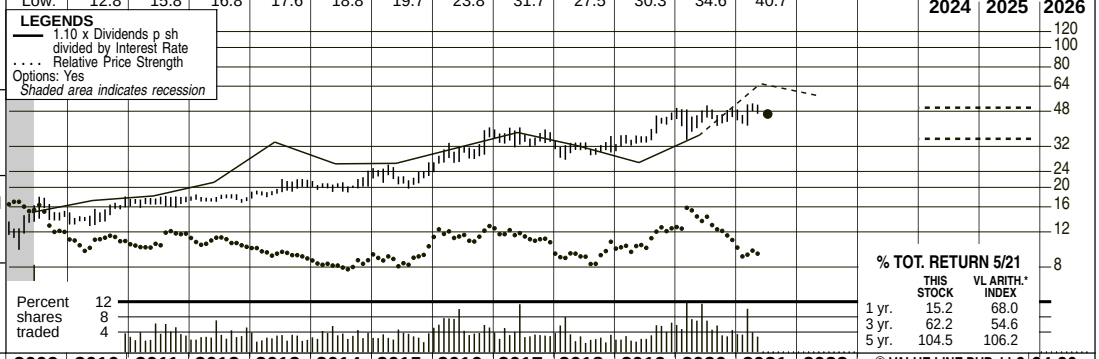
Low-High	Midpoint (% to Mid)
$35-$77	$56 (20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+5%)	4%
Low	35	(-25%)	-5%

Institutional Decisions

	3Q2020	4Q2020	1Q2021
to Buy	46	56	38
to Sell	53	46	56
Hld's(000)	5302	5341	5518



% TOT. RETURN 5/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	15.2	68.0
3 yr.	62.2	54.6
5 yr.	104.5	106.2

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.74	3.96	4.12	*4.20*	*4.35*	Revenues per sh	*5.10*
.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.58	1.70	1.90	*1.95*	*2.10*	"Cash Flow" per sh	*2.45*
.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.04	1.11	1.27	*1.35*	*1.40*	Earnings per sh A	*1.65*
.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.67	.70	.73	*.78*	*.83*	Div'd Decl'd per sh B	*1.00*
1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	- -	.16	.09	*1.35*	*1.45*	Cap'l Spending per sh	*1.85*
4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	9.75	10.31	10.97	*11.55*	*12.00*	Book Value per sh	*12.90*
10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	12.94	13.02	13.06	*13.00*	*12.90*	Common Shs Outst'g C	*12.80*
26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	30.3	33.8	35.7	*Bold figures are*		Avg Ann'l P/E Ratio	*25.0*
1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.74	1.64	1.80	1.83	*Value Line*		Relative P/E Ratio	*1.40*
2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%	2.1%	1.9%	1.6%	*estimates*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $122.1 mill. **Due in 5 Yrs** $42.5 mill.
LT Debt $122.1 mill. **LT Interest** $5.5 mill.
(46% of Cap'l)
Pension Assets12/20 $56.3 mill.
Oblig. $54.1 mill.

Pfd Stock None

Common Stock 13,071,733 shs.

MARKET CAP: $600 million (Small Cap)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		24-26
40.6	41.4	42.4	45.9	47.1	47.6	48.6	48.4	51.6	53.9	*54.5*	*56.0*	Revenues ($mill)	*65.0*
9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	14.4	16.6	*17.5*	*18.0*	Net Profit ($mill)	*21.0*
35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	15.7%	13.5%	10.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	1.7%	2.5%	3.2%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	42.5%	41.3%	46.3%	*44.5%*	*42.5%*	Long-Term Debt Ratio	*37.5%*
52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.5%	58.7%	53.7%	*55.5%*	*57.5%*	Common Equity Ratio	*62.5%*
180.2	184.8	188.4	189.4	196.3	198.7	209.5	219.5	228.7	266.8	*270*	*270*	Total Capital ($mill)	*265*
233.0	240.3	244.2	253.2	261.4	270.9	288.8	299.2	313.2	343.6	*355*	*370*	Net Plant ($mill)	*405*
6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	7.3%	7.4%	7.1%	*7.5%*	*7.5%*	Return on Total Cap'l	*9.0%*
9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.6%	*11.5%*	*11.5%*	Return on Shr. Equity	*13.0%*
9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.6%	*11.5%*	*11.5%*	Return on Com Equity	*13.0%*
2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	3.8%	4.0%	5.0%	*5.0%*	*4.5%*	Retained to Com Eq	*5.0%*
73%	74%	74%	64%	62%	67%	63%	64%	62%	57%	*58%*	*59%*	All Div'ds to Net Prof	*61%*

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	- -	5.0	.1
Accounts Receivable	4.4	5.2	4.0
Inventory (Avg. Cost)	1.0	1.0	1.0
Other	4.0	5.1	5.3
Current Assets	9.4	16.3	10.4
Accts Payable	3.4	6.5	6.6
Debt Due	6.5	- -	- -
Other	5.3	5.5	5.8
Current Liab.	15.2	12.0	12.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	2.5%	*4.5%*
"Cash Flow"	6.0%	5.5%	*6.0%*
Earnings	6.0%	5.5%	*6.5%*
Dividends	3.5%	4.0%	*6.0%*
Book Value	4.5%	4.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	11.6	12.0	12.7	12.1	48.4
2019	11.8	13.0	13.7	13.1	51.6
2020	12.9	13.3	14.3	13.4	53.9
2021	13.1	*13.5*	*14.4*	*13.5*	*54.5*
2022	*13.5*	*13.7*	*15.0*	*13.8*	*56.0*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.20	.26	.29	.29	1.04
2019	.22	.28	.35	.26	1.11
2020	.31	.32	.36	.28	1.27
2021	.28	*.35*	*.37*	*.35*	*1.35*
2022	*.30*	*.36*	*.38*	*.36*	*1.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666	.1666	.1733	.673
2019	.1733	.1733	.1733	.1802	.70
2020	.1802	.1802	.1802	.1874	.73
2021	.1874	.1874			

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2020, the company's average daily availability was 35.6 million gallons and its service territory had an estimated population of 202,000. Has more than 72,600 customers. Residential customers accounted for 66% of 2020 revenues; commercial and industrial (26%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 108 full-time employees at 12/31/20. President/Chief Executive Officer: J.T. Hand. Officers/directors own 1.3% of the common stock (3/21 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water reported decent first-quarter results. Revenues of $13.1 million came in roughly on par with our expectation, driven by customer base expansion and increased water usage, particularly in the residential arena. On point, March-period earnings of $0.28 per share matched our estimate. The modest year-over-year decline can be attributed to a nonrecurring life insurance gain in the first quarter of 2020. For the recently ended June period, we look for a noteworthy bottom-line improvement, to $0.35 per share, underpinned by lower taxes due to higher applicable deductions and increased consumer consumption.

Based on management's latest commentary, relatively aggressive capital spending is on tap through the end of 2021. In the first three months of the year, York spent about $7 million on construction expenditures, including infrastructure improvements and replacements. Over the next two quarters, in addition to investments made in the recently ended June period, the company intends to spend upward of $26 million on water main upgrades, the completion of a wastewater treatment plant, software system updates, and pipe and service line repairs. All told, these improvements are vital to support its growing customer base.

The company's operations should prove resilient over the pull to mid-decade. Periodic rate hikes are likely in the cards, as York is apt to recoup a portion of its abovementioned capital investments by raising customer prices. Moreover, as the economic recovery picks up steam, both commercial and residential water usage ought to follow suit. Further customer base expansion is likely, too.

York Water is pegged to mirror the broader market averages over the coming six to 12 months (Timeliness: 3). The stock etched a fresh high-water mark in early June, but has given back most of its gains in recent sessions. To that end, with limited catalysts on the horizon, York shares do not stand out for the year ahead. Moreover, patient subscribers should probably hold off on initiating a position here, as total return potential out to 2024-2026 is unenticing at the current quotation.

Nicholas P. Patrikis *July 9, 2021*

(A) Diluted earnings. Next earnings report due early August.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	80
Price Growth Persistence	70
Earnings Predictability	100

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Community Utilities of Pennsylvania, Inc.
Summary of Risk Premium Models for the
Proxy Group of Six Water Companies

	Proxy Group of Six Water Companies
Predictive Risk Premium Model (PRPM) (1)	11.68 %
Risk Premium Using an Adjusted Total Market Approach (2)	10.49 %
Average	11.09 %

Notes:
(1) From page 11 of this Schedule.
(2) From page 12 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

Proxy Group of Six Water Companies	[1] LT Average Predicted Variance	[2] Spot Predicted Variance	[3] Recommended Variance (2)	[4] GARCH Coefficient	[5] Predicted Risk Premium (3)	[6] Risk-Free Rate (4)	[7] Indicated ROE (5)	
American States Water Company	0.38%	0.32%	0.38%	1.9155	9.02%	2.74%	11.76%	
American Water Works Company, Inc.	0.23%	0.19%	0.23%	6.0313	18.16%	2.74%	20.90%	(6)
California Water Service Group	0.32%	0.25%	0.32%	2.0654	8.17%	2.74%	10.91%	
Middlesex Water Company	0.32%	0.50%	0.32%	2.1852	8.62%	2.74%	11.36%	
SJW Group	0.41%	0.33%	0.41%	1.5616	8.00%	2.74%	10.74%	
York Water Company	0.45%	0.44%	0.45%	2.1712	12.47%	2.74%	15.21%	
						Average	12.00%	
						Median	11.36%	
						Average of Mean and Median	11.68%	

NMF = Not Meaningful Figure

Notes:

(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.

(2) Given current market conditions, I recommend using the long-term average predicted variance.

(3) $(1+(\text{Column [3]} * \text{Column [4]})^{\wedge 12}) - 1$.

(4) From note 2 on page 23 of this Schedule.

(5) Column [5] + Column [6].

(6) Results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six Water Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.48	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.38	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.86	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.04	(3)
5.	Adjusted Prospective Bond Yield	3.90	%
6.	Equity Risk Premium (4)	6.59	
7.	Risk Premium Derived Common Equity Cost Rate	10.49	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 19 and 20 of this Schedule).
(2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.38% from page 13 of this Schedule.
(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 14 of this Schedule. The 0.04% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.25% = 0.04%) as derived from page 13 of this Schedule.
(4) From page 16 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1] Aaa Rated Corporate Bond	[2] A2 Rated Public Utility Bond	[3] Baa2 Rated Public Utility Bond
Jul-2021	2.57 %	2.95 %	3.20 %
Jun-2021	2.79	3.16	3.41
May-2021	2.96	3.33	3.58
Average	2.77 %	3.15 %	3.40 %

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:
0.38 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:
0.25 % (2)

Notes:
(1) Column [2] - Column [1].
(2) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for
Proxy Group of Six Water Companies

	Moody's Long-Term Issuer Rating August 2021		Standard & Poor's Long-Term Issuer Rating August 2021	
Proxy Group of Six Water Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
American States Water Company (2)	A2	6.0	A+	5.0
American Water Works Company Inc (3)	A3	7.0	A	6.0
California Water Service Group (4)	NR	- -	A+	5.0
Middlesex Water Company	NR	- -	A	6.0
SJW Group (5)	NR	- -	A/A-	6.5
York Water Company	NR	- -	A-	7.0
Average	A2/A3	6.5	A	5.9

Notes:

(1) From page 15 of this Schedule.
(2) Ratings that of Golden State Water Company.
(3) Ratings that of New Jersey and Pennsylvania American Water Companies.
(4) Ratings that of California Water Service Company.
(5) Ratings that of San Jose Water Company and The Connecticut Water Company.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Community Utilities of Pennsylvania, Inc.
Judgment of Equity Risk Premium for the
Proxy Group of Six Water Companies

Line No.		Proxy Group of Six Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	7.48 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A2 rated bonds (2)	5.69
3.	Average equity risk premium	6.59 %

Notes: (1) From page 17 of this Schedule.
(2) From page 21 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Six Water Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.79
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.96
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.24
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.56
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.97
7.	Conclusion of Equity Risk Premium	9.24 %
8.	Adjusted Beta (7)	0.81
9.	Forecasted Equity Risk Premium	7.48 %

Notes provided on page 18 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2021 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa2 corporate bonds from 1928-2020.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa2 rated corporate bond yields from 1928-2020 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa2 corporate monthly bond yields, from January 1928 through July 2021.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.48% (from page 12 of this Schedule) from the projected 3-5 year total annual market return of 8.72% (described fully in note 1 on page 23 of this Schedule).

(5) Using data from Value Line for the S&P 500, an expected total return of 15.04% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.48% results in an expected equity risk premium of 11.56%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 17.45% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.48% results in an expected equity risk premium of 13.97%.

(7) Average of mean and median beta from page 22 of this Schedule.

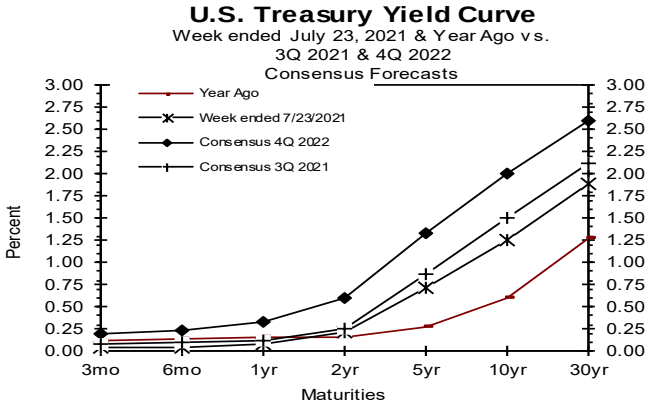
Sources of Information:

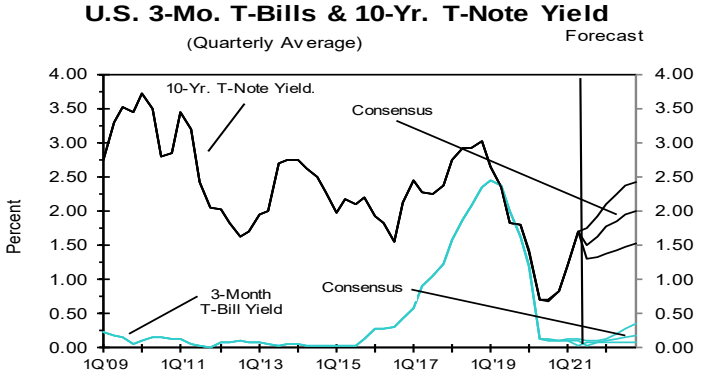
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update
Value Line Summary and Index
Blue Chip Financial Forecasts, August 3, 2021 and June 1, 2021
Bloomberg Professional Services

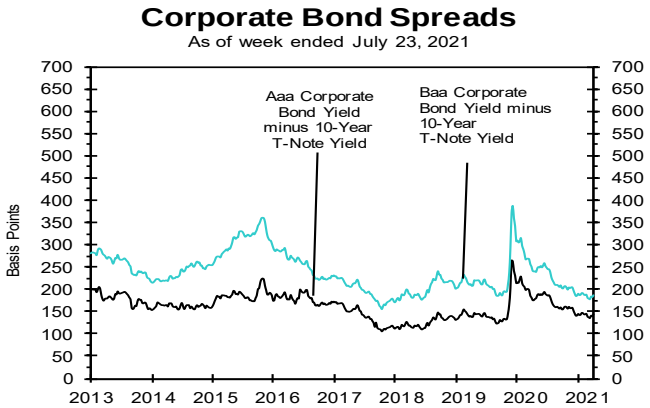
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

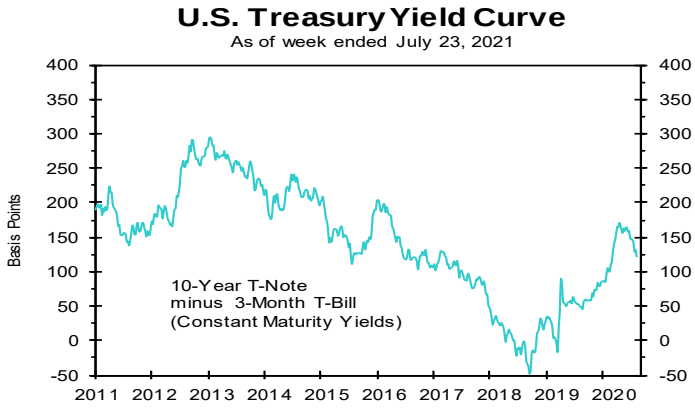
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	3Q	4Q	1Q	2Q	3Q	4Q
Interest Rates	Jul 23	Jul 16	Jul 9	Jul 2	Jun	May	Apr	2Q 2021	2021	2021	2022	2022	2022	2022
Federal Funds Rate	0.10	0.10	0.10	0.10	0.08	0.06	0.07	0.07	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**
LIBOR, 3-mo.	0.13	0.13	0.13	0.14	0.13	0.15	0.18	0.16	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**
Commercial Paper, 1-mo.	0.05	0.06	0.06	0.05	0.04	0.10	0.04	0.06	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 3-mo.	0.05	0.05	0.06	0.05	0.04	0.02	0.02	0.03	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 6-mo.	0.05	0.05	0.06	0.06	0.05	0.04	0.04	0.04	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
Treasury bill, 1 yr.	0.07	0.08	0.08	0.08	0.07	0.05	0.06	0.06	**0.1**	**0.1**	**0.2**	**0.2**	**0.3**	**0.3**
Treasury note, 2 yr.	0.21	0.24	0.22	0.25	0.20	0.16	0.16	0.17	**0.2**	**0.3**	**0.4**	**0.5**	**0.5**	**0.6**
Treasury note, 5 yr.	0.71	0.81	0.78	0.88	0.84	0.82	0.86	0.84	**0.9**	**1.0**	**1.1**	**1.2**	**1.3**	**1.3**
Treasury note, 10 yr.	1.26	1.36	1.34	1.47	1.52	1.62	1.64	1.59	**1.5**	**1.6**	**1.8**	**1.9**	**1.9**	**2.0**
Treasury note, 30 yr.	1.89	1.97	1.96	2.08	2.16	2.32	2.30	2.26	**2.1**	**2.3**	**2.4**	**2.5**	**2.6**	**2.6**
Corporate Aaa bond	2.69	2.74	2.74	2.81	2.91	3.06	3.04	3.00	**2.8**	**3.0**	**3.1**	**3.2**	**3.3**	**3.3**
Corporate Baa bond	3.13	3.19	3.19	3.26	3.35	3.52	3.51	3.46	**3.5**	**3.7**	**3.9**	**4.0**	**4.1**	**4.2**
State & Local bonds	2.59	2.60	2.63	2.66	2.64	2.64	2.66	2.65	**2.4**	**2.5**	**2.6**	**2.6**	**2.7**	**2.7**
Home mortgage rate	2.78	2.88	2.90	2.98	2.98	2.96	3.06	3.00	**3.0**	**3.2**	**3.3**	**3.4**	**3.5**	**3.5**
	History								Consensus Forecasts-Quarterly					
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Key Assumptions	2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022	2022
Fed's AFE $ Index	110.6	110.5	111.4	112.4	107.3	105.2	103.4	102.9	**104.5**	**104.4**	**104.0**	**103.9**	**103.9**	**104.0**
Real GDP	2.8	1.9	-5.1	-31.2	33.8	4.5	6.3	6.5	**7.2**	**5.5**	**4.0**	**3.3**	**2.7**	**2.3**
GDP Price Index	1.4	1.5	1.6	-1.5	3.6	2.2	4.3	6.0	**3.7**	**2.5**	**2.4**	**2.3**	**2.3**	**2.3**
Consumer Price Index	1.3	2.6	1.0	-3.1	4.7	2.4	3.7	8.4	**4.7**	**2.4**	**2.2**	**2.4**	**2.4**	**2.2**
PCE Price Index	1.1	1.7	1.3	-1.6	3.7	1.5	3.8	6.4	**3.7**	**2.2**	**2.1**	**2.3**	**2.2**	**2.2**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, PCE Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).









Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2022 through 2027 and averages for the five-year periods 2023-2027 and 2028-2032. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		---------- Average For The Year ----------						Five-Year Averages	
		2022	2023	2024	2025	2026	2027	2023-2027	2028-2032
1. Federal Funds Rate	CONSENSUS	**0.1**	**0.4**	**1.0**	**1.6**	**1.9**	**2.1**	**1.4**	**2.2**
	Top 10 Average	0.2	0.7	1.6	2.4	2.6	2.7	2.0	2.7
	Bottom 10 Average	0.1	0.1	0.5	0.9	1.3	1.5	0.9	1.6
2. Prime Rate	CONSENSUS	**3.3**	**3.5**	**4.2**	**4.7**	**5.0**	**5.2**	**4.5**	**5.2**
	Top 10 Average	3.4	3.8	4.7	5.4	5.7	5.8	5.1	5.8
	Bottom 10 Average	3.2	3.3	3.7	4.0	4.4	4.6	4.0	4.7
3. LIBOR, 3-Mo.	CONSENSUS	**0.4**	**0.6**	**1.3**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.5	1.0	1.8	2.4	2.7	2.9	2.2	3.0
	Bottom 10 Average	0.2	0.4	0.8	1.2	1.6	1.7	1.1	1.8
4. Commercial Paper, 1-Mo	CONSENSUS	**0.2**	**0.6**	**1.3**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.4	0.9	1.6	2.3	2.6	2.8	2.0	2.8
	Bottom 10 Average	0.1	0.3	0.9	1.3	1.8	1.9	1.2	2.0
5. Treasury Bill Yield, 3-Mo	CONSENSUS	**0.2**	**0.5**	**1.0**	**1.6**	**1.9**	**2.1**	**1.4**	**2.2**
	Top 10 Average	0.3	0.8	1.6	2.2	2.5	2.7	1.9	2.7
	Bottom 10 Average	0.1	0.2	0.6	0.9	1.3	1.5	0.9	1.6
6. Treasury Bill Yield, 6-Mo	CONSENSUS	**0.2**	**0.5**	**1.1**	**1.6**	**2.0**	**2.2**	**1.5**	**2.3**
	Top 10 Average	0.3	0.8	1.7	2.3	2.6	2.7	2.0	2.8
	Bottom 10 Average	0.1	0.3	0.6	1.0	1.4	1.6	1.0	1.7
7. Treasury Bill Yield, 1-Yr	CONSENSUS	**0.3**	**0.7**	**1.2**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.5	1.0	1.8	2.4	2.8	2.9	2.2	3.0
	Bottom 10 Average	0.2	0.3	0.7	1.1	1.5	1.7	1.1	1.8
8. Treasury Note Yield, 2-Yr	CONSENSUS	**0.5**	**0.9**	**1.5**	**2.0**	**2.3**	**2.5**	**1.8**	**2.6**
	Top 10 Average	0.7	1.3	2.1	2.7	3.0	3.1	2.5	3.3
	Bottom 10 Average	0.3	0.5	0.9	1.3	1.6	1.8	1.2	1.9
9. Treasury Note Yield, 5-Yr	CONSENSUS	**1.2**	**1.6**	**2.1**	**2.5**	**2.8**	**2.8**	**2.4**	**3.0**
	Top 10 Average	1.5	2.0	2.8	3.3	3.5	3.5	3.0	3.6
	Bottom 10 Average	0.9	1.2	1.5	1.8	2.0	2.2	1.7	2.3
10. Treasury Note Yield, 10-Yr	CONSENSUS	**2.0**	**2.4**	**2.7**	**3.0**	**3.2**	**3.3**	**2.9**	**3.3**
	Top 10 Average	2.3	2.8	3.4	3.8	4.0	3.9	3.6	4.0
	Bottom 10 Average	1.7	1.9	2.1	2.3	2.5	2.6	2.3	2.7
11. Treasury Bond Yield, 30-Yr	CONSENSUS	**2.6**	**2.9**	**3.3**	**3.6**	**3.8**	**3.8**	**3.5**	**3.9**
	Top 10 Average	3.0	3.5	4.0	4.5	4.6	4.5	4.2	4.6
	Bottom 10 Average	2.3	2.4	2.5	2.7	2.9	3.1	2.7	3.2
12. Corporate Aaa Bond Yield	CONSENSUS	**3.3**	**3.7**	**4.1**	**4.5**	**4.7**	**4.7**	**4.3**	**4.8**
	Top 10 Average	3.6	4.2	4.7	5.2	5.4	5.4	5.0	5.4
	Bottom 10 Average	3.1	3.2	3.4	3.7	3.9	4.1	3.7	4.2
13. Corporate Baa Bond Yield	CONSENSUS	**4.3**	**4.7**	**5.1**	**5.4**	**5.6**	**5.7**	**5.3**	**5.8**
	Top 10 Average	4.6	5.1	5.6	6.1	6.3	6.2	5.9	6.4
	Bottom 10 Average	4.0	4.3	4.5	4.7	4.9	5.2	4.7	5.2
14. State & Local Bonds Yield	CONSENSUS	**2.9**	**3.2**	**3.6**	**3.9**	**4.1**	**4.2**	**3.8**	**4.2**
	Top 10 Average	3.2	3.5	4.1	4.5	4.7	4.7	4.3	4.8
	Bottom 10 Average	2.6	2.9	3.1	3.4	3.7	3.7	3.3	3.8
15. Home Mortgage Rate	CONSENSUS	**3.6**	**4.0**	**4.4**	**4.7**	**4.9**	**5.0**	**4.6**	**5.0**
	Top 10 Average	4.0	4.5	5.0	5.5	5.6	5.6	5.2	5.7
	Bottom 10 Average	3.2	3.6	3.8	4.0	4.2	4.3	4.0	4.4
A. Fed's AFE Nominal $ Index	CONSENSUS	**103.7**	**103.7**	**104.0**	**103.7**	**103.6**	**103.3**	**103.7**	**103.1**
	Top 10 Average	105.3	106.0	106.8	107.0	107.3	107.5	106.9	107.9
	Bottom 10 Average	102.0	101.5	101.4	100.8	100.4	100.0	100.8	99.4
		---------- Year-Over-Year, % Change ----------						Five-Year Averages	
		2022	2023	2024	2025	2026	2027	2023-2027	2028-2032
B. Real GDP	CONSENSUS	**4.2**	**2.6**	**2.3**	**2.2**	**2.1**	**2.1**	**2.2**	**2.1**
	Top 10 Average	5.3	3.3	2.7	2.5	2.4	2.4	2.7	2.5
	Bottom 10 Average	2.9	2.0	1.9	1.8	1.8	1.7	1.8	1.7
C. GDP Chained Price Index	CONSENSUS	**2.3**	**2.3**	**2.2**	**2.1**	**2.2**	**2.1**	**2.2**	**2.1**
	Top 10 Average	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9
D. Consumer Price Index	CONSENSUS	**2.4**	**2.4**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**
	Top 10 Average	2.8	2.7	2.5	2.5	2.5	2.4	2.5	2.4
	Bottom 10 Average	2.1	2.1	1.9	1.9	2.0	1.9	2.0	1.9
E. PCE Price Index	CONSENSUS	**2.3**	**2.2**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
	Top 10 Average	2.7	2.5	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9

Community Utilities of Pennsylvania, Inc.
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.16 %
2.	Regression of Historical Equity Risk Premium (2)	6.45
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.62
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	7.14
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.08
6.	Average Equity Risk Premium (6)	5.69 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2020. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above.
(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - July 2021.
(4) Using data from Value Line for the S&P Utilities Index, an expected return of 11.00% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 12 of this Schedule results in an equity risk premium of 7.14%. (11.00% - 3.86% = 7.14%)
(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 8.94% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 12 of this Schedule results in an equity risk premium of 5.08%. (8.94% - 3.86% = 5.08%)
(6) Average of lines 1 through 5.

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Six Water Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Company	0.65	0.62	0.63	10.12 %	2.74 %	9.12 %	10.05 %	9.59 %
American Water Works Company, Inc.	0.85	1.06	0.95	10.12	2.74	12.36	12.48	12.42
California Water Service Group	0.65	0.65	0.65	10.12	2.74	9.32	10.21	9.76
Middlesex Water Company	0.70	0.79	0.74	10.12	2.74	10.23	10.89	10.56
SJW Group	0.80	0.98	0.89	10.12	2.74	11.75	12.03	11.89
York Water Company	0.85	0.97	0.91	10.12	2.74	11.95	12.18	12.07
Mean			0.80			10.79 %	11.31 %	11.05 %
Median			0.82			10.99 %	11.46 %	11.23 %
Average of Mean and Median			0.81			10.89	11.39	11.14 %

Notes on page 23 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2020)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2020:	12.20	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05	
MRP based on Ibbotson Historical Data:	7.15	%

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2020)	9.53	%

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - July 2021)	11.07	%

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending August 13, 2021)

Total projected return on the market 3-5 years hence*:	8.72	%
Projected Risk-Free Rate (see note 2):	2.74	
MRP based on Value Line Summary & Index:	5.98	%

*Forecasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	15.04	%
Projected Risk-Free Rate (see note 2):	2.74	
MRP based on Value Line data	12.30	%

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	17.45	%
Projected Risk-Free Rate (see note 2):	2.74	
MRP based on Bloomberg data	14.71	%
Average of Value Line, Ibbotson, and Bloomberg MRP:	10.12	%

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 19-20 of this Schedule.) The projection of the risk-free rate is illustrated below:

Third Quarter 2021	2.10	%
Fourth Quarter 2021	2.30	
First Quarter 2022	2.40	
Second Quarter 2022	2.50	
Third Quarter 2022	2.60	
Fourth Quarter 2022	2.60	
2023-2027	3.50	
2028-2032	3.90	
	2.74	%

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, August 3, 2021 and June 1, 2021
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group companies were then selected based on the unadjusted beta range of 0.44 – 0.76 and residual standard error of the regression range of 2.9599 – 3.5303 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Water Utility Proxy Group's residual standard error of the regression is 0.1426. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1426 = \frac{3.2451}{\sqrt{518}} = \frac{3.2451}{22.7596}$$

Source of Information: Value Line, Inc., June 2021
Value Line Investment Survey (Standard Edition)

Community Utilities of Pennsylvania, Inc.
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
Proxy Group of Six Water Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
American States Water Company	0.65	0.43	2.4596	0.0614
American Water Works Company, Inc.	0.85	0.77	3.2188	0.0803
California Water Service Group	0.65	0.46	3.1475	0.0785
Middlesex Water Company	0.70	0.53	3.5107	0.0876
SJW Group	0.80	0.69	3.5626	0.0889
York Water Company	0.85	0.70	3.5715	0.0891
Average	0.75	0.60	3.2451	0.0810
Beta Range (+/- 2 std. Devs. of Beta)	0.44	0.76		
2 std. Devs. of Beta	0.16			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.9599	3.5303		
Std. dev. of the Res. Std. Err.	0.1426			
2 std. devs. of the Res. Std. Err.	0.2852			

Source of Information: Valueline Proprietary Database, June 2021

Community Utilities of Pennsylvania, Inc.
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

Proxy Group of Twenty Non-Price Regulated Companies	[1] VL Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Adobe Inc.	0.75	0.58	3.1513	0.0786
Amazon.com	0.70	0.52	3.5000	0.0873
Balchem Corp.	0.75	0.56	3.5202	0.0878
Bio-Rad Labs. 'A'	0.75	0.59	3.3325	0.0831
Bristol-Myers Squibb	0.85	0.75	3.3304	0.0831
C.H. Robinson	0.70	0.53	3.0101	0.0751
CSG Systems Int'l	0.75	0.61	3.1327	0.0782
Citrix Sys.	0.65	0.44	3.4368	0.0857
Dollar General	0.65	0.47	3.1078	0.0775
Lancaster Colony	0.70	0.53	2.9606	0.0739
Lilly (Eli)	0.75	0.58	3.2162	0.0802
Pool Corp.	0.85	0.74	3.2969	0.0823
RLI Corp.	0.80	0.67	3.0423	0.0759
Smucker (J.M.)	0.65	0.44	3.1027	0.0774
Schneider National	0.80	0.65	3.4610	0.0885
Bio-Techne Corp.	0.85	0.74	3.4459	0.0860
Tyler Technologies	0.75	0.56	3.1242	0.0779
United Parcel Serv.	0.80	0.64	3.0134	0.0752
Werner Enterprises	0.75	0.60	3.3130	0.0827
West Pharmac. Svcs.	0.80	0.69	3.2862	0.0820
Average	0.75	0.59	3.2392	0.0809
Proxy Group of Six Water Companies	0.75	0.60	3.2451	0.0810

Source of Information: Valueline Proprietary Database, June 2021

Community Utilities of Pennsylvania, Inc.
Summary of Cost of Equity Models Applied to
Proxy Group of Twenty Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

Principal Methods		Proxy Group of Twenty Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)		12.89 %
Risk Premium Model (RPM) (2)		11.21
Capital Asset Pricing Model (CAPM) (3)		10.76
	Mean	11.62 %
	Median	11.21 %
	Average of Mean and Median	11.42 %

Notes:
(1) From page 28 of this Schedule.
(2) From page 29 of this Schedule.
(3) From page 32 of this Schedule.

Community Utilities of Pennsylvania, Inc.
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Bloomberg Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Adobe Inc.	- %	15.50 %	18.70 %	18.47 %	17.78 %	17.61 %	- %	NA %
Amazon.com	-	30.00	27.50	37.93	28.88	31.08	-	NA
Balchem Corp.	0.44	16.50	NA	24.00	8.20	16.23	0.48	16.71
Bio-Rad Labs. 'A'	-	11.50	NA	17.80	11.75	13.68	-	NA
Bristol-Myers Squibb	2.93	12.50	7.00	7.95	5.53	8.25	3.05	11.30
C.H. Robinson	2.17	8.00	9.00	11.40	13.47	10.47	2.28	12.75
CSG Systems Int'l	2.20	11.00	NA	(5.00)	8.00	9.50	2.30	11.80
Citrix Sys.	1.31	8.50	12.90	11.20	5.20	9.45	1.37	10.82
Dollar General	0.77	10.50	11.30	5.72	10.72	9.56	0.81	10.37
Lancaster Colony	1.55	6.50	NA	3.00	10.00	6.50	1.60	8.10
Lilly (Eli)	1.47	11.00	16.40	14.86	15.56	14.45	1.58	16.03
Pool Corp.	0.70	15.00	NA	17.00	17.00	16.33	0.76	17.09
RLI Corp.	0.95	12.00	NA	9.80	NA	10.90	1.00	11.90
Smucker (J.M.)	3.00	4.00	1.20	2.50	1.55	2.31	3.03	5.34
Schneider National	1.26	10.00	17.90	15.43	20.47	15.95	1.36	17.31
Bio-Techne Corp.	0.28	12.50	21.00	15.00	20.28	17.19	0.30	17.49
Tyler Technologies	-	12.50	NA	10.00	17.90	13.47	-	NA
United Parcel Serv.	1.99	10.50	11.70	16.13	14.01	13.09	2.12	15.21
Werner Enterprises	1.06	9.50	13.10	12.54	13.57	12.18	1.12	13.30
West Pharmac. Svcs.	0.18	17.00	28.40	25.80	20.41	22.90	0.20	23.10 (2)
							Mean	13.03 %
							Median	12.75 %
							Average of Mean and Median	12.89 %

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of August 13, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, Bloomberg, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

(2) DCF results were excluded from the final average and median as they were more than 2 standard deviations from the proxy group's mean.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 08/13/2021
www.yahoo.com Downloaded on 08/13/2021
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Twenty Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.31 %
2.	Adjustment to Reflect Proxy Group Bond Rating (2)	(0.12)
3.	Prospective Bond Yield Applicable to the Non-Price Regulated Proxy Group	4.19
4.	Equity Risk Premium (3)	7.02
5.	Risk Premium Derived Common Equity Cost Rate	11.21 %

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated August 3, 2021 and June 1, 2021 (see pages 19 and 20 of this Schedule). The estimates are detailed below.

Third Quarter 2021	3.50 %
Fourth Quarter 2021	3.70
First Quarter 2022	3.90
Second Quarter 2022	4.00
Third Quarter 2022	4.10
Fourth Quarter 2022	4.20
2023-2027	5.30
2028-2032	5.80
Average	4.31 %

(2) To reflect the Baa1 average rating of the Non-Price Regulated Proxy Group, the prosepctive yield on Baa2 corporate bonds must be adjusted downward by 1/3 of the spread between A2 and Baa2 corporate bond yields as shown below:

	A2 Corp. Bond Yield	Baa2 Corp. Bond Yield	Spread
Jul-2021	2.89 %	3.24 %	0.35 %
Jun-2021	3.10	3.45	0.35
May-2021	3.27	3.62	0.35
	Average yield spread		0.35 %
		1/3 of spread	0.12 %

(3) From page 31 of this Schedule.

Community Utilities of Pennsylvania, Inc.
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Twenty Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

	Moody's Long-Term Issuer Rating August 2021		Standard & Poor's Long-Term Issuer Rating August 2021	
Proxy Group of Twenty Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Adobe Inc.	A2	6.0	A+	5.0
Amazon.com	A1	5.0	AA	3.0
Balchem Corp.	NA	--	NA	--
Bio-Rad Labs. 'A'	Baa2	9.0	BBB	9.0
Bristol-Myers Squibb	A2	6.0	A+	5.0
C.H. Robinson	Baa2	9.0	BBB+	8.0
CSG Systems Int'l	NA	--	BB+	11.0
Citrix Sys.	Baa3	10.0	BBB	9.0
Dollar General	Baa2	9.0	BBB	9.0
Lancaster Colony	NA	--	NA	--
Lilly (Eli)	A2	6.0	A+	5.0
Pool Corp.	NA	--	NA	--
RLI Corp.	Baa2	9.0	BBB	9.0
Smucker (J.M.)	Baa2	9.0	BBB	9.0
Schneider National	NA	--	NA	--
Bio-Techne Corp.	NA	--	NA	--
Tyler Technologies	NA	--	NA	--
United Parcel Serv.	A2	6.0	A-	7.0
Werner Enterprises	NA	--	NA	--
West Pharmac. Svcs.	NA	--	NA	--
Average	Baa1	7.6	A-	7.4

Notes:
(1) From page 15 of this Schedule.

Source of Information:
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Twenty Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Twenty Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.79
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.96
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	5.24
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.56
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	13.97
7.	Conclusion of Equity Risk Premium	9.24 %
8.	Adjusted Beta (7)	0.76
9.	Forecasted Equity Risk Premium	7.02 %

Notes:

(1) From note 1 of page 18 of this Schedule.
(2) From note 2 of page 18 of this Schedule.
(3) From note 3 of page 18 of this Schedule.
(4) From note 4 of page 18 of this Schedule.
(5) From note 5 of page 18 of this Schedule.
(6) From note 6 of page 18 of this Schedule.
(7) Average of mean and median beta from page 32 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, August 3, 2021 and June 1, 2021
Bloomberg Professional Services

Community Utilities of Pennsylvania, Inc.
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Twenty Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Adobe Inc.	0.75	0.85	0.80	10.12 %	2.74 %	10.84 %	11.35 %	11.09 %
Amazon.com	0.70	0.69	0.69	10.12	2.74	9.73	10.51	10.12
Balchem Corp.	0.75	0.68	0.71	10.12	2.74	9.93	10.66	10.29
Bio-Rad Labs. 'A'	0.75	0.70	0.73	10.12	2.74	10.13	10.81	10.47
Bristol-Myers Squibb	0.85	0.80	0.82	10.12	2.74	11.04	11.50	11.27
C.H. Robinson	0.70	0.67	0.68	10.12	2.74	9.62	10.43	10.03
CSG Systems Int'l	0.75	0.91	0.83	10.12	2.74	11.14	11.57	11.36
Citrix Sys.	0.65	0.62	0.64	10.12	2.74	9.22	10.13	9.67
Dollar General	0.65	0.68	0.66	10.12	2.74	9.42	10.28	9.85
Lancaster Colony	0.70	0.72	0.71	10.12	2.74	9.93	10.66	10.29
Lilly (Eli)	0.75	0.75	0.75	10.12	2.74	10.33	10.97	10.65
Pool Corp.	0.85	0.95	0.90	10.12	2.74	11.85	12.10	11.98
RLI Corp.	0.80	0.91	0.85	10.12	2.74	11.35	11.72	11.53
Smucker (J.M.)	0.65	0.50	0.58	10.12	2.74	8.61	9.67	9.14 (4)
Schneider National	0.80	0.72	0.76	10.12	2.74	10.43	11.04	10.74
Bio-Techne Corp.	0.85	0.92	0.89	10.12	2.74	11.75	12.03	11.89
Tyler Technologies	0.75	0.76	0.76	10.12	2.74	10.43	11.04	10.74
United Parcel Serv.	0.80	0.84	0.82	10.12	2.74	11.04	11.50	11.27
Werner Enterprises	0.75	0.78	0.76	10.12	2.74	10.43	11.04	10.74
West Pharmac. Svcs.	0.80	0.74	0.77	10.12	2.74	10.54	11.12	10.83
Mean			0.76			10.48 %	11.08 %	10.78 %
Median			0.76			10.43 %	11.04 %	10.74 %
Average of Mean and Median			0.76			10.46 %	11.06 %	10.76 %

Notes:
(1) From note 1 on page 23 of this Schedule.
(2) From note 2 on page 23 of this Schedule.
(3) Average of CAPM and ECAPM cost rates.
(4) DCF results were excluded from the final average and median as they were less than 2 standard deviations from the proxy group's mean.

Community Utilities of Pennsylvania, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on August 13, 2021 (1) (millions)	(times larger)	[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	Community Utilities of Pennsylvania, Inc.	$ 45.958		10	5.01%	
2.	Proxy Group of Six Water Companies	$ 7,248.274	157.7 x	3	0.71%	4.30%

	[A] Decile	[B] Market Capitalization of Smallest Company (millions)	[C] Market Capitalization of Largest Company (millions)	[D] Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,025.803	$ 1,966,078.882	-0.22%
	2	13,178.743	28,808.073	0.49%
	3	6,743.361	13,177.828	0.71%
	4	3,861.858	6,710.676	0.75%
	5	2,445.693	3,836.536	1.09%
	6	1,591.865	2,444.745	1.37%
	7	911.586	1,591.765	1.54%
	8	451.955	911.103	1.46%
	9	190.019	451.800	2.29%
Smallest	10	2.194	189.831	5.01%

*From Duff & Phelps Cost of Capital Navigator,
CRSP Size Premia as of 12/31/2020

Notes:

(1) From page 34 of this Schedule.
(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 4.30% in Column [4], Line No. 2 is derived as follows 4.30% = 5.01% - 0.71%.

Community Utilities of Pennsylvania, Inc.
Market Capitalization of Community Utilities of Pennsylvania, Inc. and the
Proxy Group of Six Water Companies

	Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2020 (millions)	[2] Book Value per Share at Fiscal Year End 2020 (1)	[3] Total Common Equity at Fiscal Year End 2020 (millions)	[4] Closing Stock Market Price on August 13, 2021	[5] Market-to-Book Ratio on August 13, 2021 (2)	[6] Market Capitalization on August 13, 2021 (3) (millions)
	Community Utilities of Pennsylvania, Inc.		NA	NA	$ 10.678 (4)	NA		
	Based upon Proxy Group of Six Water Companies						430.4 (5)	$ 45.958 (6)
	Proxy Group of Six Water Companies							
AWR	American States Water Company	NYSE	36.889	$ 17.395	$ 641.673	$ 89.490	514.5 %	$ 3,301.206
AWK	American Water Works Company, Inc.	NYSE	181.298	35.599	6,454.000	178.920	502.6	32,437.926
CWT	California Water Service Group	NYSE	50.334	18.305	921.344	64.430	352.0	3,242.997
MSEX	Middlesex Water Company	NASDAQ	17.473	19.814	346.208	108.860	549.4	1,902.111
SJW	SJW Group	NYSE	28.557	32.117	917.160	68.670	213.8	1,960.982
YORW	York Water Company	NASDAQ	13.061	10.968	143.252	49.340	449.9	644.421
	Average		54.602	$ 22.366	$ 1,570.606	$ 93.285	430.4 %	$ 7,248.274

NA= Not Available

Notes: (1) Column [3] / Column [1].
(2) Column [4] / Column [2].
(3) Column [3] * Column [5].
(4) Company requested rate base multiplied by Company requested equity ratio.
(5) The market-to-book ratio of Community Utilities of Pennsylvania, Inc. on August 13, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Six Water Companies on August 13, 2021 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2020 Annual Forms 10K
Bloomberg Financial Services

Community Utilities of Pennsylvania, Inc.
Demonstration of the Inadequacy of
a DCF Return Rate Related to Book Value
When Market Value is Greater than Book Value

		[A]	[B]	[C]	[D]
		Based on Mr. Keller's Proxy Group		Based on Mr. Eastman's Proxy Group	
Line No.		Market Value	Book Value	Market Value	Book Value
1.	Per Share	$ 73.87 (1)	$ 21.90 (2)	$ 76.68 (1)	$ 21.90 (2)
2.	DCF Cost Rate (3)	9.24%	9.24%	9.34%	9.34%
3.	Return in Dollars (4)	$ 6.826	$ 2.023	$ 7.162	$ 2.045
4.	Dividends (5)	$ 1.411	$ 1.411	$ 1.304	$ 1.304
5.	Growth in Dollars (6)	$ 5.415	$ 0.612	$ 5.858	$ 0.741
6.	Return on Market Value (7)	9.24%	2.74%	9.34%	2.67%
7.	Rate of Growth on Market Value (8)	7.33%	0.83%	7.64%	0.97%

Notes:
(1) Average of market prices for Mr. Keller and Mr. Eastman's proxy group
(2) Average book value dividing total common equity at year-end 2020 by common shares outstanding at year-end 2020 for each proxy group company. Source SNL Financial
(3) Recommended DCF cost rates for each witness.
(4) Line 1 * Line 2.
(5) Dividends are based on Mr. Keller and Mr. Eastman's implied dividend yield.
(6) Line 3 - Line 4.
(7) Line 3 / Line 1.
(8) Line 5 / Line 1.

Community Utilities of Pennsylvania, Inc.
Calculation of Indicated DCF Applied to Book Value Capital Structure
of Mr. Keller's Proxy Group

Un-lever Indicated Market Capital Structure DCF

Ku	=	Ke	-	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	-	(	Ku	-	d	)	P	/	E
Ku	=	9.24%	-	(((	Ku	-	5.05%	)	1	-	21%	)	21.82%	/	78.16%	)	-	(	Ku	-	5.76%	)	0.02%	/	78.16%
Ku	=	9.24%	-	(((	Ku	-	5.05%	)			79.00%	)			27.92%	)	-	(	Ku	-	5.76%	)		0.03%	
Ku	=	9.24%	-	((	79.00%	*	Ku	-			3.9895%	)			27.92%	)	-	(	0.03%	*	Ku	-	0.00%	)	
Ku	=	9.24%	-	(	22.05%	*	Ku	-			1.11%	)			-0.03%		*		Ku	+	0.00%				
Ku	=	9.24%			-22.05%	*	Ku	+			1.11%				-0.03%		*		Ku	+	0.00%				
Ku	=	10.36%			-22.08%	*	Ku																		
122.08%	*	Ku	=		10.36%																				
		Ku	=		**8.48%**																				

Re-lever to Indicated Book Value Capital Structure DCF

Ke	=	Ku	+	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	+	(	Ku	-	d	)	P	/	E
Ke	=	8.48%	+	(((	8.48%	-	5.05%	)	1	-	21%	)	48.11%	/	51.84%	)	+	(	8.48%	-	5.76%	)	0.05%	/	51.84%
Ke	=	8.48%	+	(((			3.43%	)			79%	)			92.82%	)	+	(			2.72%	)		0.09%	
Ke	=	8.48%	+	((	2.71%	)	92.82%	)	+	(	0.00%	)													
Ke	=	8.48%	+	(	2.52%	)	+				0.00%														
		Ke	=		**11.00%**																				

Where:
- Ku = Un-levered (i.e., 100% equity) cost of common equity
- Ke = Market determined cost of common equity
- i = Cost of debt
- t = Income tax rate
- D = Debt ratio
- E = Equity ratio
- d = Cost of preferred stock
- P = Preferred equity ratio

Community Utilities of Pennsylvania, Inc.
Calculation of Indicated DCF Applied to Book Value Capital Structure
of Mr. Eastman's Proxy Group

Un-lever Indicated Market Capital Structure DCF

Ku	=	Ke	-	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	-	(	Ku	-	d	)	P	/	E
Ku	=	9.34%	-	(((	Ku	-	5.05%	)	1	-	21%	)	21.82%	/	78.16%	)	-	(	Ku	-	5.76%	)	0.02%	/	78.16%
Ku	=	9.34%	-	(((	Ku	-	5.05%	)			79.00%	)			27.92%	)	-	(	Ku	-	5.76%	)		0.03%	
Ku	=	9.34%	-	((	79.00%	*	Ku	-			3.9895%	)			27.92%	)	-	(	0.03%	*	Ku	-	0.00%	)	
Ku	=	9.34%	-	(	22.05%	*	Ku	-			1.11%	)			-0.03%		*		Ku	+	0.00%				
Ku	=	9.34%			-22.05%	*	Ku	+			1.11%				-0.03%		*		Ku	+	0.00%				
Ku	=	10.46%			-22.08%	*	Ku																		
122.08%	*	Ku	=		10.46%																				
		Ku	=		**8.56%**																				

Re-lever to Indicated Book Value Capital Structure DCF

Ke	=	Ku	+	(((	Ku	-	i	)	1	-	t	)	D	/	E	)	+	(	Ku	-	d	)	P	/	E
Ke	=	8.56%	+	(((	8.56%	-	5.05%	)	1	-	21%	)	48.11%	/	51.84%	)	+	(	8.56%	-	5.76%	)	0.05%	/	51.84%
Ke	=	8.56%	+	(((			3.51%				79%	)			92.82%	)	+	(			2.80%	)		0.09%	
Ke	=	8.56%	+	((	2.78%	)	92.82%	)	+	(	0.00%	)													
Ke	=	8.56%	+	(	2.58%	)	+				0.00%														
		Ke	=		**11.14%**																				

Where:
- Ku = Un-levered (i.e., 100% equity) cost of common equity
- Ke = Market determined cost of common equity
- i = Cost of debt
- t = Income tax rate
- D = Debt ratio
- E = Equity ratio
- d = Cost of preferred stock
- P = Preferred equity ratio

Community Utilities of Pennsylvania, Inc.
Mr. Keller Corrected Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]
Proxy Group of Six Water Companies	Value Line Adjusted Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Company	0.65	8.81 %	2.88 %	8.60 %	9.37 %	8.98 %
American Water Works Company, Inc.	0.85	8.81	2.88	10.36	10.69	10.52
California Water Service Group	0.65	8.81	2.88	8.60	9.37	8.98
Middlesex Water Company	0.70	8.81	2.88	9.04	9.70	9.37
SJW Group	0.85	8.81	2.88	10.36	10.69	10.52
Essential Utilities	0.95	8.81	2.88	11.24	11.35	11.29
York Water Company	0.80	8.81	2.88	9.92	10.36	10.14
Mean	0.78			9.73 %	10.22 %	9.97 %
Median	0.80			9.92 %	10.36 %	10.14 %
Average of Mean and Median	0.79			9.83	10.29	10.06 %

(1) Market Return From I&E Exhibit No. 2, Schedule 13 minus Column [3]
(2) Includes 2028 - 2032 Forecast; Source: Blue Chip Financial Forecast - June 1, 2021
(3) Average of Column [4] and Column [5]

Community Utilities of Pennsylvania, Inc.
Portfolio Ranks by Size and Risk Premiums over CAPM Results
as Compiled by Duff and Phelps Guide to Cost of Capital

Portfolio Rank by Size	B-1 Market Val. of Equity (in $millions)	RP	B-2 Average Book Val. (in $millions)	RP	B-3 5-yr Net Income (in $millions)	RP	B-4 Market Value of Invested Capital (in $millions)	RP	B-5 Total Assets (in $millions)	RP	B-6 5-yr EBITDA (in $millions)	RP	B-7 Sales (in $millions)	RP	B-8 Average Number of Employees	RP
1	$222,261 and Up	-0.78%	$44,861 and Up	1.22%	$7,190 and Up	0.85%	$258,435 and Up	-0.32%	$121,632 and Up	0.84%	$14,837 and Up	0.95%	$95,905 and Up	1.02%	234,707 and Up	0.67%
2	$67,607 - $222,261	0.50%	$15,985 - $44,861	1.88%	$2,418 - $7,190	1.69%	$85,545 - $258,435	0.77%	$52,712 - $121,632	1.52%	$5,561 - $14,837	1.74%	$33,447 - $95,905	1.85%	92,311 - 234,707	1.57%
3	$42,245 - $67,607	0.96%	$10,286 - $15,985	2.16%	$1,515 - $2,418	1.98%	$54,459 - $85,545	1.19%	$34,307 - $52,712	1.79%	$3,740 - $5,561	2.03%	$20,941 - $33,447	2.25%	62,769 - 92,311	1.92%
4	$29,591 - $42,245	1.30%	$7,504 - $10,286	2.32%	$1,013 - $1,515	2.28%	$39,733 - $54,459	1.47%	$23,000 - $34,307	2.08%	$2,748 - $3,740	2.24%	$16,179 - $20,941	2.43%	47,290 - 62,769	2.16%
5	$21,930 - $29,591	1.57%	$5,725 - $7,504	2.49%	$772 - $1,013	2.47%	$29,472 - $39,733	1.69%	$17,517 - $23,000	2.29%	$2,103 - $2,748	2.43%	$12,750 - $16,179	2.60%	36,723 - 47,290	2.36%
6	$16,592 - $21,930	1.83%	$4,594 - $5,725	2.60%	$613 - $772	2.62%	$21,901 - $29,472	1.97%	$14,200 - $17,517	2.43%	$1,650 - $2,103	2.59%	$10,380 - $12,750	2.75%	28,971 - 36,723	2.55%
7	$12,962 - $16,592	2.06%	$3,718 - $4,594	2.72%	$502 - $613	2.76%	$17,501 - $21,901	2.16%	$11,581 - $14,200	2.57%	$1,315 - $1,650	2.75%	$8,805 - $10,380	2.87%	23,614 - 28,971	2.73%
8	$10,730 - $12,962	2.26%	$3,164 - $3,718	2.82%	$422 - $502	2.87%	$14,263 - $17,501	2.33%	$9,608 - $11,581	2.69%	$1,094 - $1,315	2.88%	$7,598 - $8,805	2.97%	19,619 - 23,614	2.87%
9	$9,185 - $10,730	2.39%	$2,750 - $3,164	2.89%	$355 - $422	2.98%	$11,972 - $14,263	2.49%	$8,067 - $9,608	2.81%	$924 - $1,094	2.98%	$6,502 - $7,598	3.07%	16,645 - 19,619	3.02%
10	$7,763 - $9,185	2.53%	$2,388 - $2,750	2.96%	$305 - $355	3.08%	$10,234 - $11,972	2.61%	$6,901 - $8,067	2.92%	$784 - $924	3.10%	$5,381 - $6,502	3.18%	14,557 - 16,645	3.12%
11	$6,515 - $7,763	2.68%	$2,059 - $2,388	3.04%	$259 - $305	3.17%	$8,619 - $10,234	2.74%	$6,025 - $6,901	3.01%	$675 - $784	3.20%	$4,454 - $5,381	3.32%	12,653 - 14,557	3.23%
12	$5,542 - $6,515	2.84%	$1,769 - $2,059	3.12%	$221 - $259	3.29%	$7,384 - $8,619	2.89%	$5,275 - $6,025	3.09%	$582 - $675	3.30%	$3,801 - $4,454	3.43%	11,017 - 12,653	3.34%
13	$4,806 - $5,542	2.97%	$1,542 - $1,769	3.20%	$189 - $221	3.37%	$6,601 - $7,384	2.99%	$4,495 - $5,275	3.19%	$509 - $582	3.39%	$3,318 - $3,801	3.53%	9,726 - 11,017	3.44%
14	$4,160 - $4,806	3.09%	$1,358 - $1,542	3.27%	$159 - $189	3.49%	$5,895 - $6,601	3.07%	$3,807 - $4,495	3.30%	$450 - $509	3.47%	$2,935 - $3,318	3.62%	8,526 - 9,726	3.54%
15	$3,572 - $4,160	3.22%	$1,204 - $1,358	3.33%	$138 - $159	3.58%	$5,125 - $5,895	3.18%	$3,263 - $3,807	3.40%	$402 - $450	3.55%	$2,571 - $2,935	3.70%	7,367 - 8,526	3.65%
16	$3,052 - $3,572	3.36%	$1,049 - $1,204	3.39%	$120 - $138	3.67%	$4,340 - $5,125	3.30%	$2,788 - $3,263	3.50%	$349 - $402	3.62%	$2,252 - $2,571	3.80%	6,292 - 7,367	3.77%
17	$2,627 - $3,052	3.50%	$899 - $1,049	3.48%	$103 - $120	3.76%	$3,663 - $4,340	3.45%	$2,358 - $2,788	3.61%	$293 - $349	3.73%	$2,005 - $2,252	3.88%	5,374 - 6,292	3.90%
18	$2,238 - $2,627	3.62%	$778 - $899	3.55%	$87 - $103	3.85%	$3,084 - $3,663	3.58%	$2,011 - $2,358	3.72%	$241 - $293	3.85%	$1,786 - $2,005	3.95%	4,623 - 5,374	4.02%
19	$1,859 - $2,238	3.79%	$670 - $778	3.63%	$71 - $87	3.98%	$2,511 - $3,084	3.73%	$1,712 - $2,011	3.82%	$195 - $241	3.99%	$1,554 - $1,786	4.03%	3,913 - 4,623	4.14%
20	$1,527 - $1,859	3.95%	$574 - $670	3.71%	$57 - $71	4.12%	$2,016 - $2,511	3.91%	$1,429 - $1,712	3.93%	$161 - $195	4.12%	$1,296 - $1,554	4.14%	3,231 - 3,913	4.28%
21	$1,243 - $1,527	4.13%	$488 - $574	3.79%	$47 - $57	4.24%	$1,633 - $2,016	4.08%	$1,171 - $1,429	4.05%	$135 - $161	4.24%	$1,046 - $1,296	4.28%	2,608 - 3,231	4.44%
22	$964 - $1,243	4.31%	$401 - $488	3.89%	$36 - $47	4.38%	$1,281 - $1,633	4.25%	$913 - $1,171	4.19%	$106 - $135	4.36%	$853 - $1,046	4.43%	2,007 - 2,608	4.62%
23	$658 - $964	4.59%	$319 - $401	3.99%	$25 - $36	4.56%	$899 - $1,281	4.48%	$646 - $913	4.38%	$76 - $106	4.56%	$648 - $853	4.55%	1,451 - 2,007	4.86%
24	$329 - $658	5.02%	$190 - $319	4.13%	$13 - $25	4.86%	$457 - $899	4.86%	$352 - $646	4.65%	$42 - $76	4.80%	$349 - $648	4.81%	798 - 1,451	5.13%
25	Up To $329	6.05%	Up To $190	4.66%	Up To $13	5.55%	Up To $457	5.79%	Up To $352	5.30%	Up To $42	5.50%	Up To $349	5.56%	Up to 798	5.99%

	B-1 Value	Portfolio Ranking	B-2 Value	Portfolio Ranking	B-3 Value	Portfolio Ranking	B-4 Value	Portfolio Ranking	B-5 Value	Portfolio Ranking	B-6 Value	Portfolio Ranking	B-7 Value	Portfolio Ranking	B-8 Value	Portfolio Ranking
Mr. Keller's and Mr. Eastman's Water Proxy Group	$ 6,986	11	$ 2,015	12	$ 146	15	$ 10,082	11	$ 6,907	10	$ 409	15	$ 1,040	22	1,917	23
Community Utilities of Pennsylvania, Inc.	$ 37	25	$ 11	25	$ 0.3	25	$ 38	25	$ 14	25	$ 1	25	$ 5	25	9	25
Indicated Risk Premium - Water Proxy Group	3.37%		1.54%		1.97%		3.05%		2.38%		1.95%		1.13%		1.13%	

Sources of Information:

Duff & Phelps Risk Premium Size Study Premia as of December 31, 2020.
SNL Financial
SEC Form 10-K
Company financial statements

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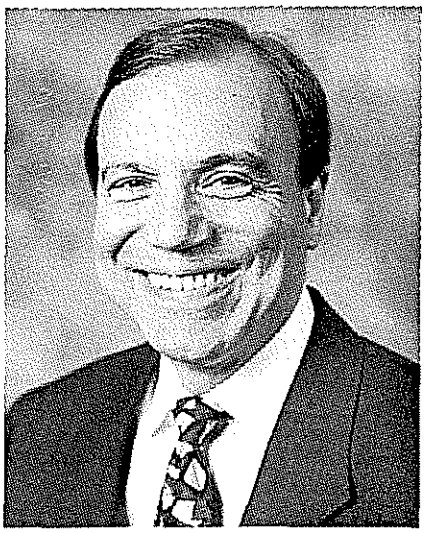
Comparable Earnings: New Life for an Old Precept

by
Frank J. Hanley
Pauline M. Ahern

Reprinted from the American Gas Association's *Financial Quarterly Review*
Summer 1994 edition, Arlington, Va.

Comparable Earnings: New Life for an Old Precept

Accelerating deregulation has greatly increased the investment risk of natural gas utilities. As a result, the authors believe it more appropriate than ever to employ the comparable earnings model. We believe our application of the model overcomes the greatest traditional objection to it — lack of comparability of the selected non-utility proxy firms. Our illustration focuses on a target gas pipeline company with a beta of 0.96 — almost equal to the market's beta of 1.00.



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Introduction

The comparable earnings model used to determine a common equity cost rate is deeply rooted in the standard of "corresponding risk" enunciated in the landmark *Bluefield* and *Hope* decisions of the U.S. Supreme Court.[1] With such solid grounding in the foundations of rate of return regulation, comparable earnings should be accepted as a principal model, along with the currently popular market-based models, provided that its most common criticism, non-comparability of the proxy companies, is overcome.

Our comparable earnings model overcomes the non-comparability issue of the non-utility firms selected as a proxy for the target utility, in this example, a gas pipeline company. We should note that in the absence of common stock prices for the target utility (as with a wholly-owned subsidiary), it is appropriate to use the average of a proxy group of similar risk gas pipeline companies whose common stocks are actively traded. As we will demonstrate, our selection process results in a group of domestic, non-utility firms that is comparable in total risk, the sum of business and financial risk, which reflects both non-diversifiable systematic, or market, risk as well as diversifiable unsystematic, or firm-specific, risk.

Embedded in the Landmark Decisions

As stated in *Bluefield* in 1922: "A public utility is entitled to such rates as will permit it to earn a return ... on investments in other business undertakings which are attended by corresponding risks and uncertainties ..."

In addition, the court stated in *Hope* in 1944: "By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."

Thus, the "corresponding risk" precept of *Bluefield* and *Hope* predates the use of such market-based cost-of-equity models as the Discounted Cash Flow (DCF) and Capital Asset Pricing (CAPM), which were developed later and are currently popular in rate-base/rate-of-return regulation. Consequently, the comparable earnings model has a longer regulatory and judicial history. However, it has far greater relevance now than ever before in its history because significant deregulation has substantially increased natural gas utilities' investment risk to a level similar to that of non-utility firms. As a result, it is

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more important than ever to look to similar-risk non-utility firms for insight into common equity cost rate, especially in view of the deficiencies inherent in the currently popular market-based cost of common equity models, particularly the DCF model.

Despite the fact that the landmark decisions are still regarded as having set the standards for determining a fair rate of return, the comparable earnings model has experienced decreased usage by expert witnesses, as well as less regulatory acceptance over the years. We believe the decline in the popularity of the comparable earnings model, in large measure, is attributable to the difficulty of selecting non-utility proxy firms that regulators will accept as comparable to the target utility. Regulatory acceptance is difficult to gain when the selection process is arbitrary. Our application of the model is objective and consistent with fundamental financial tenets.

Principles of Comparable Earnings

Regulation is a substitute for the competition of the marketplace. Moreover, regulated public utilities compete in the capital markets with all firms, including unregulated non-utilities. The comparable earnings model is based upon the opportunity cost principle; i.e., that the true cost of an investment is the return that could have been earned on the next best available alternative investment of similar risk. Consequently, the comparable earnings model is consistent with regulatory and financial principles, as it is a surrogate for the competition of the marketplace, and investors seek the greatest available rate of return for bearing similar risk.

The selection of comparable firms is the most difficult step in applying the comparable earnings model, as noted by Phillips[2] as well as by Bonbright, Danielsen and Kamerschen.[3] The selection of non-utility proxy firms should result in a sufficiently broad-based group in order to minimize the effect of company-specific aberrations. However, if the selection process is arbitrary, it likely would result in a proxy group that is too broad-based, such as the Standard & Poor's 500 Composite Index or the Value Line Industrial Composite. The use of such groups would require subjective adjustments to the comparable earnings results to reflect risk differences between the group(s) and the target utility, a gas pipeline company in this example.

Authors' Selection Criteria

We base the selection of comparable non-utility firms on market-based, objective, quantitative measures of risk resulting from market prices that subsume investors' assessments of all elements of risk. Thus, our approach is based upon the principle of risk and return; namely, that firms of comparable risk should be expected to earn comparable returns. It is also consistent with the "corresponding risk" standard established in *Bluefield* and *Hope*. We measure total investment risk as the sum of non-diversifiable systematic and diversifiable unsystematic risk. We use the unadjusted beta as a measure of systematic risk and the standard error of the estimate (residual standard error) as a measure of unsystematic risk. Both the unadjusted beta and the residual standard error are derived from a regression of the target utility's security returns relative to the market's returns, which takes the general form:

$$r_{it} = a_i + b_i r_{mt} + e_{it}$$

where:

r_{it} = tth observation of the ith utility's rate of return

r_{mt} = tth observation of the market's rate of return

e_{it} = tth random error term

a_i = constant least-squares regression coefficient

b_i = least-squares regression slope coefficient, the unadjusted beta.

As shown by Francis,[4] the total variation or risk of a firm's return, Var (r_i), comes from two sources:

Var (r_i) = total risk of ith asset

$= \text{var}(a_i + b_i r_m + e)$ substituting $(a_i + b_i r_m + e)$ for r_i

$= \text{var}(b_i r_m) + \text{var}(e)$ since $\text{var}(a_i) = 0$

$= b_i^2 \text{var}(r_m) + \text{var}(e)$ since $\text{var}(b_i r_m) = b_i^2 \text{var}(r_m)$

= systematic + unsystematic risk

Francis[5] also notes: "The term $\sigma^2(r_i|r_m)$ is called the *residual variance around the regression line* in statistical terms or *unsystematic risk* in capital market theory language. $\sigma^2(r_i|r_m) = \ldots = \text{var}(e)$. The residual variance is the squared standard error in regression language, a measure of unsystematic risk." Application of these criteria results in a group of non-utility firms whose average total investment risk is indeed comparable to that of the target gas pipeline.

As a measure of systematic risk, we use the Value Line unadjusted beta. Beta measures the extent to which market-wide or macro-economic events affect a firm's stock price. We use the unadjusted beta of the target utility as a starting point because it results from the regression of the target utility's security returns relative to the market's returns. Thus, the resulting standard deviation of beta relates to the unadjusted beta. We use the standard deviation of the unadjusted beta to determine the range around it as the selection criterion based on systematic risk.

We use the residual standard error of the regression as a measure of unsystematic risk. The residual standard error reflects the extent to which events specific to the firm's operations affect a firm's stock price. Thus, it is a measure of diversifiable, unsystematic, firm-specific risk.

An Illustration of Authors' Approach

Step One: We begin our approach by establishing the selection criteria as a range of both unadjusted beta and residual standard error of the target gas

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pipeline company.

As shown in table 1, our target gas pipeline company has a Value Line unadjusted beta of 0.90, whose standard deviation is 0.1250. The selection criterion range of unadjusted beta is the unadjusted beta plus (+) and minus (-) three of its standard deviations. By using three standard deviations, 99.73 percent of the comparable unadjusted betas is captured.

Three standard deviations of the target utility's unadjusted beta equals 0.38 (0.1250 x 3 = 0.3750, rounded to 0.38). Consequently, the range of unadjusted betas to be used as a selection criteria is 0.52 - 1.28 (0.52 = 0.90 - 0.38) and (1.28 = 0.90 + 0.38).

Likewise, the selection criterion range of residual standard error equals the residual standard error plus (+) and minus (-) three of its standard deviations. The standard deviation of the residual standard error is defined as: $\sigma/\sqrt{2N}$.

As also shown in table 1, the target gas pipeline company has a residual standard error of 3.7867. According to the above formula, the standard deviation of the residual standard error would be 0.1664 ($0.1664 = 3.7867/\sqrt{2(259)} = 3.7867/22.7596$, where 259 = N, the number of weekly price change observations over a period of five years). Three standard deviations of the target utility's residual standard error would be 0.4992 (0.1664 x 3 = .4992). Consequently, the range of residual standard errors to be used as a selection criterion is 3.2875 - 4.2859 (3.2875 = 3.7867 - 0.4992) and (4.2859 = 3.7867 + 0.4992).

Step Two: The step one criteria are applied to Value Line's data base of nearly 4,000 firms for which Value Line derives unadjusted betas and residual standard errors on a weekly basis. All firms with unadjusted betas and residual standard errors within the criteria ranges are then selected.

Step Three: In the regulatory ratemaking environment, authorized common equity return rates are applied to a book-value rate base. Thus, the earnings rates on book common equity, or net worth, of competitive, non-utility firms are highly relevant provided those firms are indeed comparable in total risk to the target gas pipeline. The use of the return rates of other utilities has no relevance because their allowed, and hence subsequently achieved, earnings rates are dependent upon the regulatory

table 1

Summary of the Comparable Earnings Analysis for the Proxy Group of 248 Non-Utility Companies Comparable in Total Risk to the Target Gas Pipeline Company[1]

	1	2	3	4	5	6	7	8
				rate of return on net worth				
	adj. beta	unadj. beta	residual standard error	3-year average[2]	4-year average[2]	5-year average[2]	5-year projected[3]	
average for the proxy group of 248 non-utility companies comparable in total risk to the target gas pipeline company	0.97	0.92	3.7705					
target gas pipeline company	0.96	0.90[4]	3.7867					
median				11.7%	12.0%	12.6%	15.5%	
average of the median historical returns					12.1%			
conclusion[5]								13.8%

[1]The criteria for selection of the non-utility group was that the non-utility companies be domestic and included in *Value Line Investment Survey*. The non-utility group was selected based on an unadjusted beta range of 0.52 to 1.28 and a residual standard error range of 3.2875 to 4.2859.
[2]Ending 1992.
[3]1996-1998/1997-1999.
[4]The average standard deviation of the target gas pipeline company's unadjusted beta is 0.1250.
[5]Equal weight given to both the average of the 3-, 4- and 5-year historical medians (12.1%) and 5-year projected median rate of return on net worth (15.5%). Thus, 13.8% = (12.1% + 15.5% / 2).
Source: Value Line Inc., March 15, 1994
Value Line Investment Survey

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process. Consequently, we believe all utilities must be eliminated to avoid circularity. Moreover, we believe non-domestic firms must be eliminated because their reporting methods differ significantly from U.S. firms.

Step Four: We then eliminated those firms for which Value Line does not publish a "Ratings & Report" in *Value Line Investment Survey* so that the historical and projected returns on net worth[6] are from a consistent source. We use historical returns on net worth for the most recent five years, as well as those projected three to five years into the future. We believe it is logical to evaluate both historical and projected return rates because it is reasonable to assume that investors avail themselves of both when they are available from widely disseminated information services, such as Value Line Inc. The use of Value Line's return rates on net worth understates the common equity return rates for two reasons. First, preferred stock is included in net worth. Second, the net worth return rates are as of the end of each period. Thus, the use of average common equity return rates would yield higher results.

Step Five: Median returns based on the historical average three, four and five years ending 1992 and projected 1996-1998 or 1997-1999 rates of return on net worth are then determined as shown in columns 4 through 7 of table 1. The median is used due to the wide variations and skewness in rates of return on net worth for the non-utility firms as evidenced by the frequency distributions of those returns as shown in illustration 1.

However, we show the average unadjusted beta, 0.92, and residual standard error, 3.7705, for the proxy group in columns 2 and 3 of table 1 because their frequency distributions are not significantly skewed, as shown in illustration 2.

Step Six: Our conclusion of a com-

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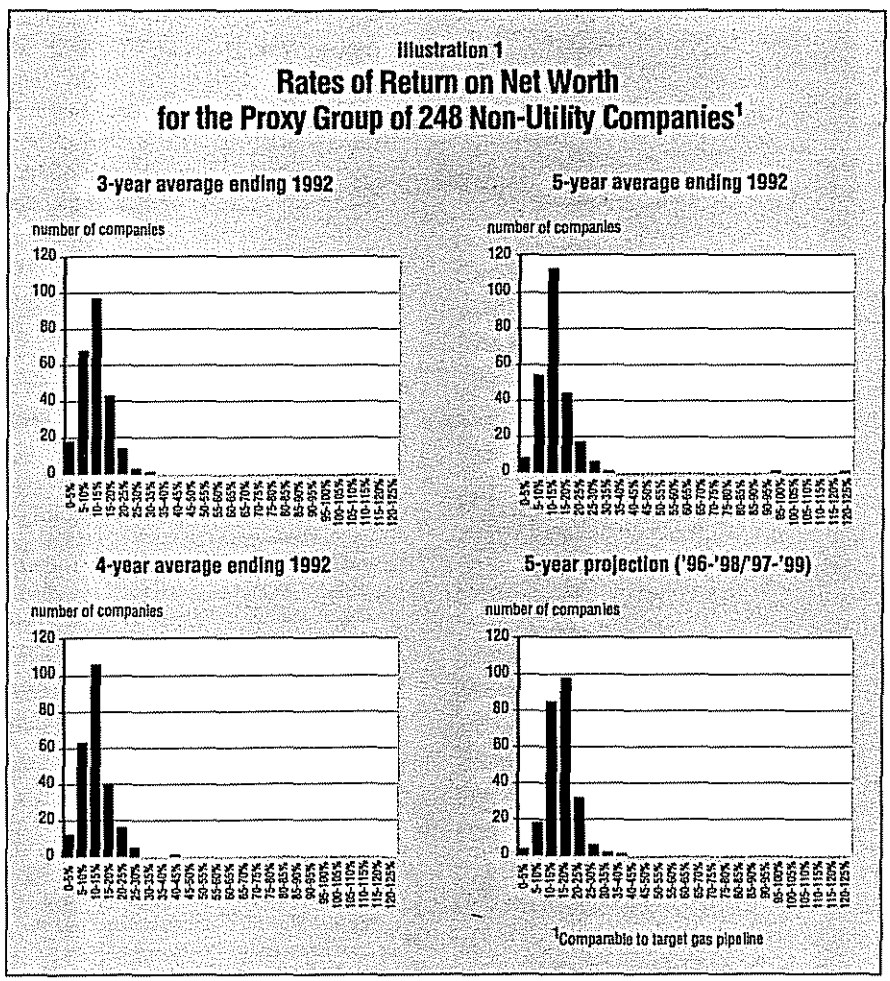

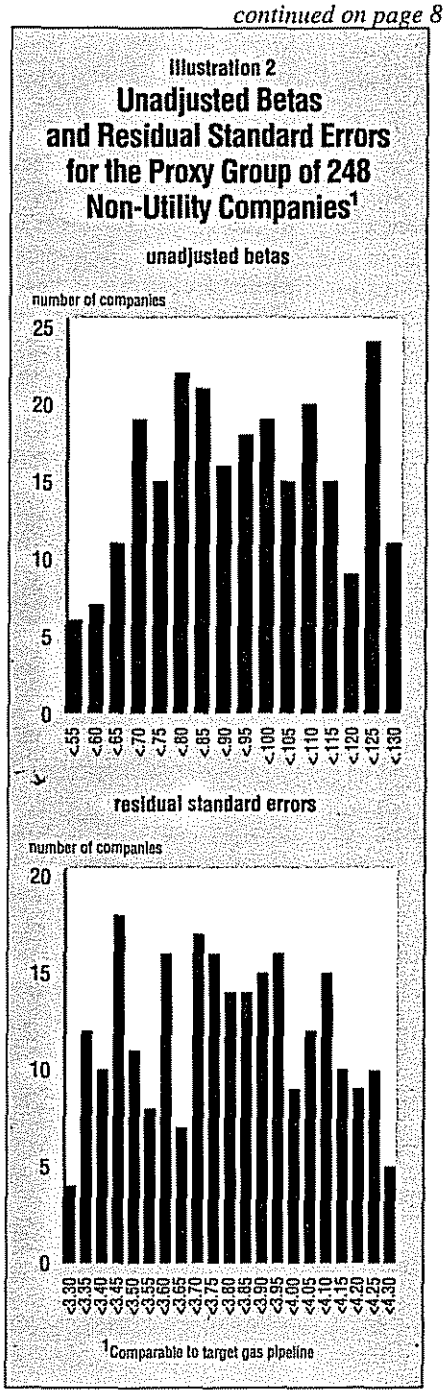

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parable earnings cost rate is based upon the mid-point of the average of the median three-, four- and five-year historical rates of return on net worth of 12.1 percent as shown in column 5 and the median projected 1996-1998/1997-1999 rate of return on net worth of 15.5 percent as shown in column 7 of table 1. As shown in column 8, it is 13.8 percent.

Summary

Our comparable earnings approach demonstrates that it is possible to select a proxy group of non-utility firms that is comparable in total risk to a target utility. In our example, the 13.8 percent comparable earnings cost rate is very conservative as it is an expected achieved rate on book common equity (a regulatory allowed rate should be greater) and because it is based on end-of-period net worth. A similar rate on average net worth would be about 20 to 40 basis points higher (i.e., 14.0 to 14.2 percent) and still understate the appropriate regulatory allowed rate of return on book common equity.

Our selection criteria are based upon measures of systematic and unsystematic risk, specifically unadjusted beta and residual standard error. They provide the basis for the objective selection of comparable non-utility firms. Our selection criteria rely on changes in market prices over approximately five years. We compare the aggregate total risk, or the sum of systematic and unsystematic risk, which reflects investors' aggregate assessment of both business and financial risk. Thus, no adjustments are necessary to the proxy group results to compensate for the differences in business risk and financial risk, such as accounting practices and debt/equity ratios. Moreover, it is inappropriate to attempt a comparison of the target utility with any individual firm, or subset of firms, in the proxy group because only the average firm of the group is relevant.

Because the comparable earnings model is firmly anchored in the "corresponding risk" precept established in the landmark court decisions, it is worthy of consideration as a principal model for use in estimating the cost rate of common equity capital of a regulated utility. Our approach to the comparable earnings model produces a proxy group that is indeed comparable in total risk because the selection process is objective and quantitative. It therefore overcomes criticism linked to arbitrary selection processes.

All cost-of-common-equity models, including the DCF and CAPM, are fraught with deficiencies, usually stemming from the many necessary but unrealistic assumptions that underlie them. The effects of the deficiencies of individual models can be mitigated by using more than one model when estimating a utility's common equity cost rate. Therefore, when the non-comparability issue is overcome, the comparable earnings model deserves to receive the same consideration as a primary model, as do the currently popular market-based models. ■

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[1] *Bluefield Water Works Improvement Co. v. Public Service Commission*, 262 U.S. 679 (1922) and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 519 (1944).

[2] Charles F. Phillips Jr., The Regulation of Public Utilities: Theory and Practice, Public Utilities Reports Inc., 1988, p. 379.

[3] James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utilities Rates, 2nd edition, Public Utilities Reports Inc., 1988, p. 329.

[4] Jack Clark Francis, Investments: Analysis and Management, 3rd edition, McGraw-Hill Book Co., 1980, p. 363.

[5] Id., p. 548.

[6] Returns on net worth must be used when relying on Value Line data because returns on book common equity for non-utility firms are not available from Value Line.

Report Lists Pipeline, Storage Projects

More than $9 billion worth of projects to expand the nation's natural gas pipeline network are in various stages of development, according to an A.G.A. report. These projects involve nearly 8,000 miles of new pipelines and capacity additions to existing lines and represent 15.3 billion cubic feet (Bcf) per day of new pipeline capacity.

During 1993 and early 1994, construction on 3,100 miles of pipeline was completed or under way, at a cost of nearly $4 billion, says A.G.A. These projects are adding 5.4 Bcf in daily delivery capacity nationwide.

Among the projects completed in 1993 were Pacific Gas Transmission Co.'s 805 miles of looping that allows increased deliveries of Canadian gas to the West Coast; Northwest Pipeline Corp.'s addition of 433 million cubic feet of daily capacity for customers in the Pacific Northwest and Rocky Mountain areas; and the 156-mile Empire State Pipeline in New York.

In addition, major construction projects were started on the systems of Texas Eastern Transmission Corp. and Algonquin Gas Transmission Co. — both subsidiaries of Panhandle Eastern Corp. — and along Florida Gas Transmission Co.'s pipeline.

The report goes on to discuss another $5 billion in proposed projects, which, if completed, will add nearly 5,000 miles of pipeline and 9.8 Bcf per day in capacity, much of it serving Florida and West Coast markets.

A.G.A. also identifies 47 storage projects and says that if all of them are built, existing storage capacity will increase by more than 500 Bcf, or 15 percent.

For a copy of *New Pipeline Construction: Status Report 1993-94* (#F00103), call A.G.A. at (703) 841-8490. Price per copy is $6 for employees of member companies and associates and $12 for other customers.

Investments: Analysis and Management

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Beta Measurements The beta coefficient is an *index of systematic risk.* Beta coefficients may be used for ranking the systematic risk of different assets. If the beta is larger than 1, $b > 1.0$, then the asset is more volatile than the market and is called an **aggressive asset.** If the beta is less than 1, $b < 1.0$, the asset is a **defensive asset;** its price fluctuations are less volatile than the market's. Figure 10-1 illustrates the characteristic lines for three different assets that have low, medium, and high levels of beta (or undiversifiable risk).

Figure 10-2 shows that IBM is a stock with an average amount of systematic risk. IBM's beta of 1.02 indicates that its return tends to increase 2 percent more than the return on the market average when the market is rising. When the market falls, IBM's return tends to fall 2 percent more than the market's. The characteristic line for IBM has an above average correlation coefficient of $\rho = .7495$, indicating that the returns on this security follow its particular characteristic line slightly more closely than those of the average stock.

Partitioning Risk Total risk can be measured by the variance of returns, denoted Var(r). This measure of *total risk is partitioned into its systematic and unsystematic components in Equation (10-8).*[7]

$$\begin{aligned}
\mathrm{Var}(r_i) &= \text{total risk of } i\text{th asset} \\
&= \mathrm{Var}(a_i + b_i r_{m,t} + e_{i,t}) \\
&\quad \text{by substituting } (a_i + b_i r_{m,t} + e_{i,t}) \text{ for } r_{i,t} \\
&= 0 + \mathrm{Var}(b_i r_{m,t}) + \mathrm{Var}(e_{i,t}) \\
&\quad \text{since } \mathrm{Var}(a_i) = 0
\end{aligned} \tag{10-8}$$

$$\begin{aligned}
\mathrm{Var}(r_i) &= b_i^2\,\mathrm{Var}(r_m) + \mathrm{Var}(e) \qquad \text{since } \mathrm{Var}(b_i r_m) = b_i^2\,\mathrm{Var}(r_m) \\
&= \text{systematic} + \text{unsystematic risk}
\end{aligned} \tag{10-8a}$$

$$.01389 = .00780 + .00609 \qquad \text{for IBM}$$

The unsystematic risk measure Var(e) is called in regression language the *residual variance* or, synonymously, the *standard error squared.*

Undiversifiable Proportion The percentage of total risk that is systematic can be measured by the coefficient of determination ρ^2 (that is, the characteristic line's squared correlation coefficient).

[7]In this context, **partition** is a technical statistical term that means to divide the total variance into *mutually exclusive* and *exhaustive* pieces. This partition is only possible if the returns from the market are statistically independent from the residual error terms that occur simultaneously, $\mathrm{Cov}(r_{m,t}, e_{i,t}) = 0$. The mathematics of regression analysis will orthogonalize the residuals and thus ensure that the needed statistical independence exists.

$$\frac{\text{Systematic risk}}{\text{Total risk}} = \frac{b_i^2 \operatorname{Var}(r_m)}{\operatorname{Var}(r_m)} = \rho^2 \tag{10-9}$$

$$\frac{.007802}{.01389} = \frac{(1.021)^2\,(.00749)}{.00749} = .5617 \times 100 = 56.17\% \qquad \text{for IBM}$$

Diversifiable Proportion The percentage of unsystematic risk equals $(1.0 - \rho^2)$.

$$\frac{\text{Unsystematic risk}}{\text{Total risk}} = \frac{\operatorname{Var}(e)}{\operatorname{Var}(r_i)} = (1.0 - \rho^2)$$

$$\frac{.00609}{.01389} = (1.0 - .5617) = .438 \times 100 \tag{10-10}$$

$$= 43.8\% \text{ unsystematic} \qquad \text{for IBM}$$

Studies of the characteristic lines of hundreds of stocks listed on the NYSE indicate that the average correlation coefficient is approximately $\rho = .5$.[8] This means that about $\rho^2 = 25$ percent of the total variability of return in most NYSE securities is explained by movements in the market.

	NYSE average	IBM
Systematic risk: ρ^2	.25	.5617
Unsystematic risk: $(1.0 - \rho^2)$	.75	.4383
Total risk: 100%	1.00	1.0000

As explained above, systematic changes are common to all stocks and are therefore undiversifiable.

A primary use of the characteristic line (or *market model,* or the *single-index model,* as it is also called) is to assess the risk characteristics of one asset.[9] The statistics in Table 10-2, for instance, indicate that IBM's common stock is slightly more risky than the average common stock in terms of total risk and

[8]The average ρ was found to be about .5, as reported in Marshall Blume, "On the Assessment of Risk," *Journal of Finance,* March 1971, p. 4. For similar estimates, see J. C. Francis, "Statistical Analysis of Risk Surrogates for NYSE Stocks," *Journal of Financial and Quantitative Analysis,* Dec. 1979.

[9]Professor Jensen reformulated the characteristic line in a risk-premium form. See M. C. Jensen, "The Performance of Mutual Funds in the Period 1945 through 1964," *Journal of Finance,* May 1968, pp. 389–416. See also M. C. Jensen, "Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios," *Journal of Business,* vol. XLII, 1969. Jensen interprets the alpha intercept term of the characteristic line, as he formulates it, as an investment performance measure. It has been suggested that Jensen's performance measure is biased. See Keith V. Smith and Dennis A. Tito, "Risk-Return Measures of Ex-Post Portfolio Performance," *Journal of Financial and Quantitative Analysis,* Dec. 1969, vol. IV, no. 4, p. 466.

systematic risk.[10] New risk measurements must be made periodically, however, because the risk and return of an asset may change with the passage of time.[11]

10-3 CAPITAL ASSET PRICING MODEL (CAPM)

An old axiom states "there is no such thing as a free lunch." This means that you cannot expect to get something for nothing—a rule that certainly applies to investment returns. Investors who want to earn high average rates of return must take high risks and endure the associated loss of sleep, the possibility of ulcers, and the chance of bankruptcy. The question to which we now turn is: Should investors worry about total risk, undiversifiable risk, diversifiable risk, or all three?

In Chapter 1 it was suggested that *investors should seek investments that have the maximum expected return in their risk class*. Their happiness from investing is presumed to be derived as indicated in the expected utility $E(U)$ function below.

$$E(U) = f[E(r), \sigma]$$

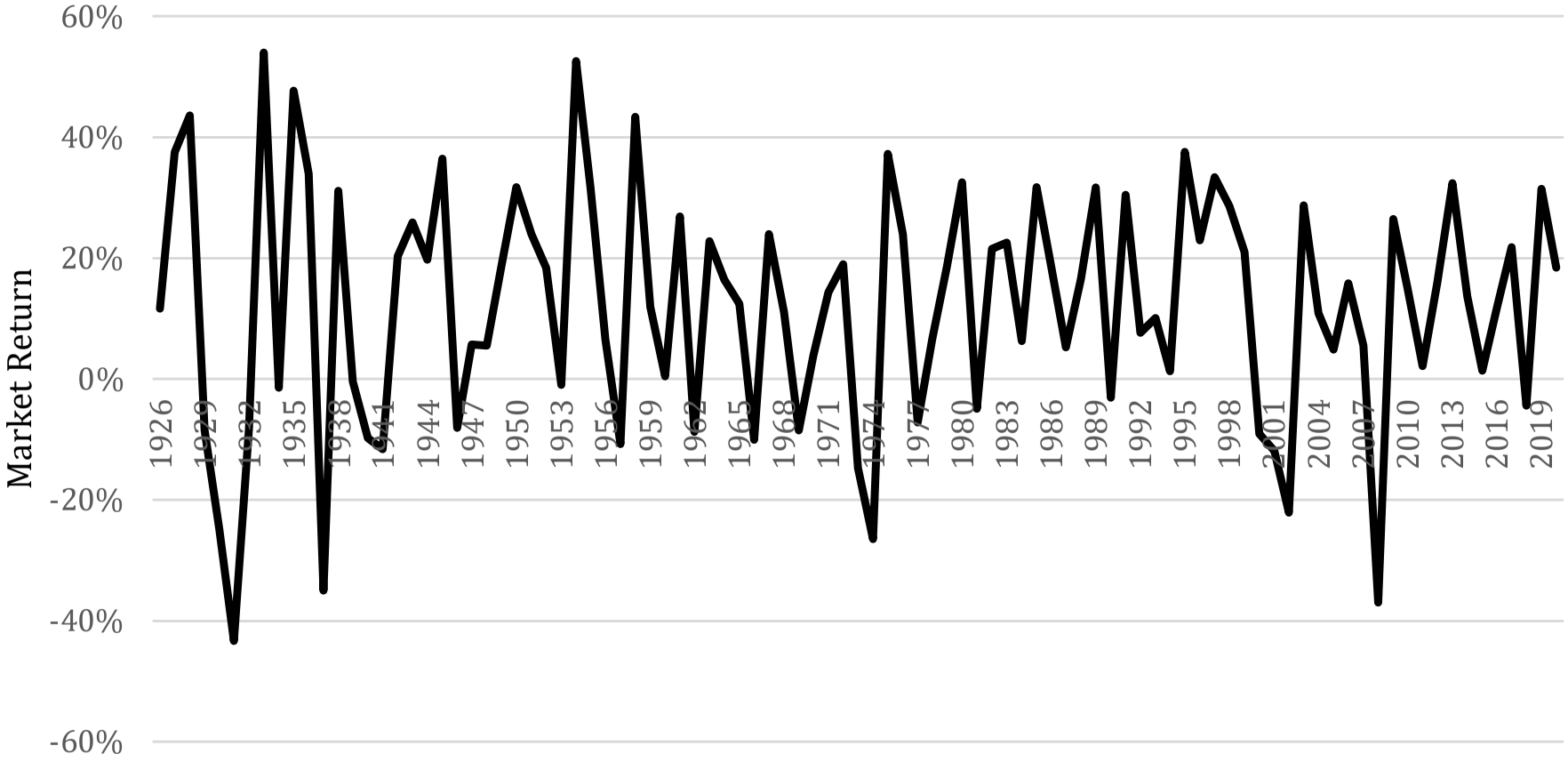
The investment preferences of wealth-seeking risk-averse investors represented by the function above cause them to maximize their expected utility (or, equivalently, happiness) by (1) maximizing their expected return in any given risk class, $\partial E(U)/\partial E(r) > 0$, or, conversely, (2) minimizing their total risk at any given rate of expected return, $\partial E(U)/\partial \sigma < 0$. However, in selecting individual assets, investors will not be particularly concerned with the asset's total risk σ. Figure 9-1 showed that the unsystematic portion of total risk can be easily diversified by holding a portfolio of different securities. But, systematic risk affects all stocks in the market because it is undiversifiable. Portfolio theory therefore suggests that only the undiversifiable (or systematic) risk is worth avoiding.[12]

[10]Statements about the relative degree of total risk are made in the context of a long-run horizon—that is, over at least one *complete business cycle*. Obviously, an accurate short-run forecast which says that some particular company will go bankrupt next quarter makes it more risky than IBM, although IBM may have had more historical variability of return.

[11]Empirical studies documenting the intertemporal instability of betas have been published. Marshall Blume, "Betas and Their Regression Tendencies," *Journal of Finance*, June 1975, pp. 785–795. See also J. C. Francis, "Statistical Analysis of Risk Coefficients for NYSE Stocks," *Journal of Financial and Quantitative Analysis*, Dec. 1979, vol. XIV, no. 5, pp. 981–997. An appendix at the end of this chapter reviews some evidence about shifting betas, standard deviations, and correlations.

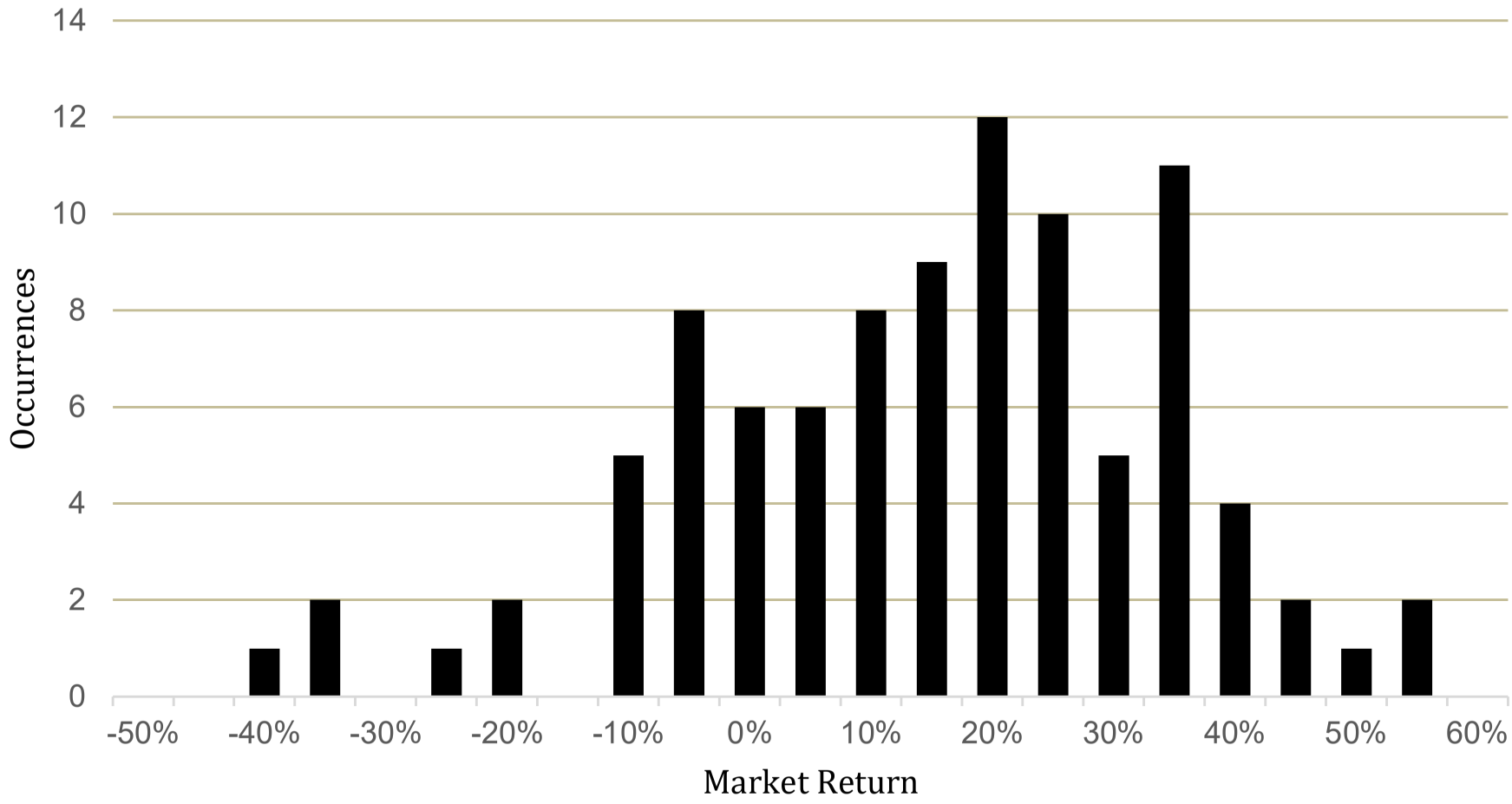
[12]Both the systematic and unsystematic portions of total risk must be considered by **undiversified investors.** Entrepreneurs who have their entire net worth invested in one business, for example, can be bankrupted by a piece of bad luck that could be easily averaged away to zero in a diversified portfolio. Poorly diversified investors should not treat diversifiable risk lightly. Only well-diversified investors can afford to ignore diversifiable risk.

U.S. Large Company Stock Returns 1926 - 2020



Source: Duff & Phelps, SBBI 2021 Yearbook: Stocks, Bonds, Bills, and Inflation 1926 - 2020, Appendix A

Histogram of U.S. Large Company Stock Returns 1926 - 2020



Source: Duff & Phelps, SBBI 2021 Yearbook: Stocks, Bonds, Bills, and Inflation 1926 - 2020, Appendix A

CUPA W STATEMENT NO. 7-R

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REBUTTAL TESTIMONY

OF

EMILY LONG

WATER & WASTEWATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Rebuttal Testimony of Emily Long (Water and Wastewater)

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A: My name is Emily Long. I am the State Operations Manager at Community Utilities of Pennsylvania Inc. ("CUPA" or "Company"). My business address is 570 Hallet Road, East Stroudsburg, PA 18301.

Q: **PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.**

A: I oversee the operation and maintenance of water and wastewater systems within Pennsylvania and New Jersey. Provide leadership and guidance in water and wastewater system management.

Q: **PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.**

A: I graduated from King's College with a Bachelor of Science degree in Environmental Science. I acquired my Master of Science Degree from Columbia Southern University in Occupational Safety and Health with a concentration in Environmental Management. I have been employed by CUPA since October of 2018 as an Operations Manager. Prior to CUPA, I was a Laboratory Supervisor with Fluid Recovery Systems. Prior to Fluid Recovery Systems, I was a Water Treatment Plant Operator with American Water. I hold PA DEP water system certification Class A Subclass 1, 2, 7, 8, 10, 11, and 12. I have passed the water system Class E exam and am awaiting certification from PA DEP.

Q: **HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?**

A: No.

Q: **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A: My testimony: (1) addresses the service related testimony from customers at the public input hearings that occurred on June 29, 2021 which I participated in; (2) responds to the service related testimony from the Office of Consumer Advocate ("OCA") and the Bureau of Investigation and Enforcement ("I&E"); and (3) comments on service related formal complaints filed in this proceeding.

PUBLIC INPUT HEARING TESTIMONY

Q: **DID YOU ATTEND THE PUBLIC INPUT HEARING HELD ON JUNE 29, 2021 IN THIS PROCEEDING?**

A: Yes. I listened into the telephonic public input hearing along with Counsel and CUPA's President, J. Bryce Mendenhall.

Q: **PLEASE SUMMARIZE THE ISSUES FROM THE PUBLIC INPUT HEARINGS.**

A: Customers at the public input hearings raised a number of service related complaints unique to each territory, listed below, which I will address separately:

General Customer Service – customer communications

Tamiment service territory

Water Service
- Water quality, drinkability, and appliance issues
- Hydrant flushing
- low water pressure
- system capacity due to unoccupied convention center
- prior operator opinions

Wastewater Service
- Sewer back flow and grinder pump issues

Penn Estates service territory
- August 2020 system outage
- Boil Water advisories
- Sediment in water and appliance issues

Westgate service territory
- Hydrants and valves exercised and tested

General Customer Service – customer communications

Q: **AT THE PUBLIC INPUT HEARINGS, SOME CUSTOMERS RAISED CONCERNS WITH CUSTOMER SERVICE COMMUNICATIONS AND NOTICES NOT BEING RECEIVED. PLEASE DESCRIBE HOW CUPA COMMUNICATES WITH CUSTOMERS.**

A: CUPA communicates with customers through the customer's individual preferred method, whether that be email, text, or phone, in addition to mailings to the service address or another address a customer has on file if not a permanent residence (particularly in the Tamiment service territory where many of the service addresses are vacation homes or rentals). Customers can access their online account and update their contact information and preferred method of communication at any time to keep CUPA informed of any changes. In addition, customers can call CUPA's customer service and provide updates to their contact information should the customer not be able to update their information through their online account.

Q: **HOW DO EMERGENT ISSUES, SUCH AS OUTAGES OR MAIN BREAKS GET ESCALATED WHEN A CUSTOMER CALLS?**

A: For service-related inquiries, the Company's standard is to respond to all emergency calls-such as water outages, sewer back-ups, main breaks, etc.- immediately. Contact center personnel are trained to ask the customer a series of questions to assist field personnel in their response. Once all pertinent information has been gathered by the contact center, a "field activity" ("FA") is prepared and pushed out to the appropriate field staff for further investigation and intervention. After-hours emergency issues are handled by a third-party service and answered by a live agent. The agent records pertinent information including (1) location: (2) contact information: and (3) service issue. The information is then relayed to the on-call operations technician through text, cell phone and/or email. If the on-call technician does not respond within 15 minutes, the next designated manager/technician is contacted. The Company has multiple staff members across the State serving in on-call status for after hour emergencies every day.

Q: **CUSTOMER SERVICE WAS AN ISSUE DISCUSSED BY CUSTOMERS AT THE PUBLIC HEARING INCLUDING THE ABILITY TO RESOLVE ISSUES WITH THE COMPANY OVER THE PHONE. CAN YOU PLEASE DISCUSS THESE ISSUES?**

A: First, the average hold time for customers calling the Company in 2021 is approximately 41 seconds. Call-by-call volume times can vary based on time of day, system issues, and how busy the call center is at any given time but we operate against a "Target Average Speed of Answer Service Level" of eighty (80%) percent of all calls answered within sixty (60) seconds of entering queue. We recognize that the more customer service personnel we hire, the greater these costs will be for our customers, but I believe that an

average hold time of sixty (60) seconds strikes a reasonable balance. Further, most issues are resolved within 6-7 minutes representing the average customer "treatment time".

Q: **HOW DOES CUPA KNOW IF THE CUSTOMER CONTACT INFORMATION, ASIDE FROM BILLING ADDRESS, IS UP TO DATE FOR EACH CUSTOMER?**

A: CUPA has no way to know if customers are keeping their preferred contact information on their account up-to-date, and relies on customers to keep CUPA informed of any changes in preferred contact method, changes in phone number, changes in mailing address, changes in email address etc.

Tamiment service territory – Water Service

Q: **PLEASE DESCRIBE THE WATER QUALITY RELATED COMPLAINTS FROM THE PUBLIC INPUT HEARING REGARDING THE TAMIMENT SERVICE TERRITORY?**

A: The water quality complaints voiced at the public input hearing relating to Tamiment included statements regarding rings in toilets, discolored clothes, sediment in water, chlorine odor, water quality notices, and failing hot water heaters. However, prior to the public hearing, CUPA received minimal calls or reports from customers with similar complaints.

Q: **CAN YOU DESCRIBE WHAT CUSTOMER COMPLAINTS CUPA HAS RECEIVED FROM TAMIMENT CUSTOMERS REGARDING WATER QUALITY PRIOR TO THE PUBLIC INPUT HEARING?**

A: CUPA received few calls from customers concerning the water quality complaints listed above. In 2019, CUPA received 3 dirty water complaints and one low pressure complaint.

These complaints were related to operations switching between wells while performing maintenance which affected the systems pressure zones. CUPA responded to each of these calls, of which two of the three customer's water had cleared up by the time CUPA arrived to investigate, and the remaining one cleared up after 2-3 minutes of running water once CUPA was on site. There were no follow-up complaints by these customers. In 2020, CUPA received 7 low pressure and 2 chlorine odor water complaints. Five of the low pressure complaints were due to customer plumbing issues such as bad pressure release valves ("PRV") which are the responsibility of the customer. The remaining 2 low pressure calls were the result of Tamiment's Tank 1 level dropping lower than normal from an electrical issue related to a Variable Frequency Device ("VFD"). The VFD issue was resolved within 12 hours of notification to the Company. The 2 chlorine odor complaints were investigated by CUPA, but the operator could not detect any chlorine or other odors from the water at the premises. The hydrants in the area were flushed as a precaution. The water quality notices customers received are referenced in CUPA's 2019 CCR.

Q: **DO ANY OF THE TAMIMENT CUSTOMER COMPLAINTS YOU JUST REFERENCED RAISE ANY CONCERN FOR ONGOING WATER QUALITY ISSUES?**

A: They do not, and in that regard, I agree with the OCA's Mr. Fought's conclusion that the Tamiment customer complaint log does not need to be addressed further. OCA St. No. 4 at 18:18-20.

Q: **ARE YOU AWARE OF CUPA'S ANNUAL WATER QUALITY REPORTS FOR THE TAMIMENT SYSTEM?**

A: Yes, I am aware of the annual water quality reports for Tamiment since CUPA acquired the system. CUPA provided the 2019 and 2020 annual reports to the parties after the public input hearing. Additionally, attached as CUPA Exhibit No. EL-1R are all of CUPA's annual reports since 2018 (or since 2019 for Tamiment after it was acquired).

Q: **DO THE 2019 AND 2020 ANNUAL REPORTS INDICATE CUPA EVER PROVIDED UNSAFE OR INADEQUATE SERVICE.**

A: No. The 2019 report indicated that CUPA did not receive any violations for contaminants or other water quality concerns. As can be seen in the 2019 Tamiment report, the only violations CUPA had were related to recordkeeping and monitoring for chlorine residuals, two of which actually occurred in 2020 and were noted in the 2020 report as well. Similarly, the 2020 report for Tamiment shows that CUPA's only violations were for monitoring chlorine residuals noted in both 2019 and 2020 reports and failure to timely submit reports to PADEP. Therefore, CUPA is providing safe and adequate water service in the Tamiment territory. To correct the timely reporting and data submission issues, staff has prepared and maintains a calendar of testing events to reference each week and/or month to confirm that all required samples have been obtained.

Q: **MOVING ON, PLEASE DISCUSS CUPA'S FIRE HYDRANT TESTING PROGRAMS AND NOTICES TO CUSTOMERS AT TAMIMENT.**

A: CUPA flushes hydrants in water systems at least once per year. CUPA acquired Tamiment 8/14/19 and did not flush hydrants in 2019. Tamiment hydrants were flushed 7/1/20 – 7/6/20. Community wide communication was sent 6/29/20 and 7/2/20 letting customers know hydrants would be flushed. Hydrants were flushed 6/14/21 – 6/18/21,

community wide communication was sent 6/11/21. CUPA has a 3 year hydrant operation and maintenance schedule with Rogers Hydrant Service starting in 2020.

Q: **DO YOU KNOW WHY SOME CUSTOMERS RAISED COMPLAINTS THAT THEY DID NOT RECEIVE NOTICES FROM CUPA?**

A: While I cannot address whether each customer reviewed notices sent by CUPA, I can state that CUPA provides notices to all customers via their preferred method and using information which they provide the Company as I discussed above. CUPA provides notices to all contacts and addresses of record. If a customer registers for our digital platform "My Utility Connect" ("MUC"), they are prompted to enter their phone number and email address. By default, all customers are opted in for voice-reach ("VR") messages via the telephone number provided. Therefore, the telephone number entered will be used for all outbound Company messages. Customers can also opt-in for email and/or text alerts if they desire but that is at their discretion.

Q: **MOVING ON, HAS CUPA RECEIVED COMPLAINTS REGARDING LOW WATER PRESSURE IN THE TAMIMENT SYSTEM?**

A: As I previously discussed above, CUPA has received very few low-pressure complaints, the majority of which were due to customer plumbing issues, while only 2 were related to CUPA's system. Further, only two Tamiment customers at the public input hearings indicated they had low pressure issues. CUPA has addressed the low-pressure concerns within the Tamiment service territory, but generally speaking the data and investigations do not indicate any ongoing or material low pressure concerns as a result of CUPA's service.

Q: **MOVING ON, SOME CUSTOMERS COMPLAINED THAT THEY WERE PAYING FOR TOO BIG OF A WATER AND WASTEWATER TREATMENT PLANT DUE TO THE CONVENTION CENTER NOT BEING IN USE. DO YOU HAVE ANY COMMENTS ON THE CONVENTION CENTER'S VACANCY ON CUPA'S OPERATIONS AND EXPENSES?**

A: Since CUPA acquired Tamiment, the Mt. Laurel Performing Arts Center has been closed. Mt. Laurel Performing Arts Center pays base charges for water and wastewater. If they were using water and wastewater they would be charged per 1,000 gallons water used in addition to the base charge. The closed center has no impact on CUPA's operations or expenses.

Q: **FINALLY, REGARDING THE VARIOUS UPGRADES, MAINTENANCE, AND FACILITIES, JAVIER PASTRANA TESTIFIED AT THE PUBLIC INPUT HEARING WHERE HE CLAIMED TO BE A PRIOR OPERATOR OF THE TAMIMENT SYSTEMS. DO YOU HAVE ANY COMMENTS ON HIS TESTIMONY REGARDING THE STATUS OF THE TAMIMENT SYSTEMS WHEN CUPA ACQUIRED THEM IN 2019?**

A: Javier Pastrana was a part-time operator for Pennsylvania Utility Company, the prior owner of the Tamiment system. Mr. Pastrana and the other operator were not DEP certified water/wastewater operators.

In reference to the wells, Mr. Pastrana stated "both had new pumps installed within the last five years." In September 2019, Well 3 pump failed and was replaced. Due to poor condition, CUPA also replaced the pump electrical wire and piping, check valve, and all fittings. In June 2020, Well 1 pump failed and was replaced. Due to poor condition,

CUPA also replaced the pump electrical wire and piping, check valve, and all fittings. Once acquired, CUPA operators performed all internal lab work to ensure the system was operating properly. The results of internal lab work performed that day by the Pennsylvania Utility Company operators, who were not DEP certified, did not match the results from CUPA operators which are DEP certified.

Additionally, when CUPA first took over operations, there was excessive sludge in the trains of the Waste Water Treatment Plant. The filter could not be backwashed due to failed equipment. CUPA proactively rehabbed the WWTP filter throughout 2019 – 2020. This consisted of new filter media, new pumps, and piping. Likewise, when CUPA first took over operations, the lagoon pump was broken and the spray irrigation system could not be utilized. CUPA hired a 3rd party to mow the grass around spray heads, replace irrigation spray heads, install a new pump, and unblocked the lagoon pump intake screen once CUPA took over operations after the acquisition. The entire Wastewater Treatment Plant (WWTP) and office were covered in bird fecal matter. The WWTP, office, and warehouse were cluttered with the personal belongings of Pennsylvania Utility Company operators such as abandoned vehicles, living room furniture, large fish tanks containing snapping turtles, tires, etc. CUPA cleaned these areas in 2019 and also improved the facility in 2020. The WWTP electrical system was in disrepair and was replaced and upgraded in 2020. The Lake Side Lift Station will be scheduled for replacement, with engineering to occur in 2021 and construction in 2022. This project will also remove the Labar Lift Station. To further show the status of the Tamiment facilities as well as the significant and necessary work CUPA put in to the facilities once acquired, please see the attached CUPA Exhibit No. EL-4R. As can be seen, Exhibit No. EL-4R depicts many of

the "before and after" pictures of the Tamiment system as acquired in 2019, and the significant and necessary repairs CUPA has undertook at the facilities since then. As I just described, the testimony of the prior operator at the public input hearing is inaccurate at best, and intentionally misleading at worse. The fact remains that while many may not like rate increases, upgrades cost money and changes to rates are necessary to provide the level of service that CUPA aspires.

Tamiment service territory – Wastewater Service

Q: **PLEASE DESCRIBE THE SEWER BACK FLOW AND GRINDER PUMP ISSUES RAISED AT THE PUBLIC INPUT HEARING.**

A: As described in OCA Statement No. 4 at page 30, seven customers complained about sewer back flow issues, including backflow valves, and grinder pump failures. In particular, Jessica Cline testified to her issues which occurred in July 2020 where her backflow check valve failed while no one was at the service address, leading to wastewater entering her house.

Q: **WHAT IS A SEWER BACKFLOW VALVE AND DOES CUPA MAINTAIN OR OPERATE THESE?**

A: A sewer backflow valve, also known as a sewer check valve, is valve which only allows flow in one direction. Its purpose is to prevent sewer from flowing into a home when the grinder pump is not running. CUPA is not responsible for the maintenance or operation of sewer check valves on customer-owned facilities or lines, instead they are the customer's responsibility to maintain.

Q: **WHAT IS A GRINDER PUMP AND WHY IS IT NEEDED AT SOME PROPERTIES IN THE TAMIMENT SERVICE TERRITORY?**

A: The Glen at Tamiment is serviced by a low pressure sewer force main. Due to the elevation changes of the terrain in The Glen a gravity collection system was not installed. A grinder pump is needed to discharge wastewater into the low pressure force main. These types of customer-owned facilities are not unusual—for instance many customers across the country have to use sump pumps due to the location of their home or its construction. Not all customers in Tamiment require grinder pumps, and the customer grinder pumps are limited to certain areas as the system was originally designed. Ultimately, the grinder pump is the customer's property and responsibility to maintain. A diagram depicting a general layout for low-pressure systems which utilize customer owned grinder pumps is attached as CUPA Exhibit No. EL-2R

Q: **PLEASE DISCUSS THE GRINDER PUMP FAILURE COMPLAINTS THE COMPANY HAS RECEIVED.**

A: The Glen at Tamiment's Community Manager contacted me in 2020 with concerns related to grinder pumps. She was receiving grinder pump complaints from the community and wanted to bring it to my attention. I informed her we were receiving very few customer calls related to grinder pumps and to have the customers contact us directly so we could investigate directly. Subsequently, grinder pump related calls to CUPA increased in June 2020. CUPA and our contractor, Environmental Services Corporation (ESC), attended a board meeting at The Glen on July 19, 2020. CUPA answered questions relating to the gravity collections system, low-pressure force main system, lift stations, and maintenance of them. CUPA and ESC explained grinder pumps, the customer check valves, CUPA's operating PSI, and customer responsibilities related to grinder pumps.

Q: **WHAT HAPPENED NEXT?**

A: On July 20, 2020 CUPA and ESC investigated the areas of The Glen experiencing grinder pump issues. They found no blockages and force main pressures ranging from 5-20 PSI, which is below the operating PSI of a grinder pump. ESC released air within the low pressure force main. After releasing the air, the system pressure remained 5-20 PSI. ESC installed 3 new air release valves (ARV) in the low pressure force main and repaired the one existing ARV. Based on CUPA's and ESC's investigation, the 2019 and 2020 grinder pump issues are not the result of CUPA's system or failure thereof.

Q: **WHY IS IT IMPORTANT THAT WHEN ESC RELEASED THE AIR WITHIN THE MAIN, THERE WAS NO CHANGE IN PRESSURE?**

A: The results of the investigation finding no build up in pressure in the main indicates that there is no concern for increased system pressure within the main even prior to ESC installing 3 new ARVs and repairing another. After installation of the new ARVs, CUPA believes it is very unlikely that there is any pressure buildup within the main which could impact customer's check valves and grinder pumps. Therefore, CUPA's system was not and is not negatively impacting customer owned check valves and grinder pumps, and the failures of those devices raised by customers is not attributable to CUPA.

Q: **AT PAGE 30 OF OCA STATEMENT NO. 4, MR. FOUGHT RECOMMENDS THAT WHILE GRINDER PUMPS ARE THE CUSTOMER'S RESPONSIBILITY, CUPA SHOULD PROVIDE INFORMATION REGARDING GRINDER PUMP SYSTEMS TO CUSTOMERS WHO HAVE THEM. IS THIS SOMETHING THE COMPANY IS WILLING TO DO?**

A: Yes. In fact, CUPA already provided significant information to the Community during the July 19, 2020 community meeting. I have attached the questions from that meeting and CUPA's answers which were distributed to customers as CUPA Exhibit No. EL-3R. Additionally, the image depicting grinder pumps I previously identified was distributed to customers at the meeting. See CUPA Exhibit No. EL-2R.

Q: **PLEASE DESCRIBE THE CLINE PROPERTY INCIDENT WHICH WAS DISCUSSED AT THE PUBLIC INPUT HEARING.**

A: As Ms. Cline discussed on the record during the public input hearing, she was out of town for about five days during July 2020, and returned to her house flooded with sewage. N.T. 211. In particular, Ms. Cline indicated she returned home on July 8, 2020. N.T. 213. Two days later on July 10, 2020, Ms. Cline called CUPA Customer Service stating "sewage back up into home and grinder pump overflowed." CUPA promptly investigated the incident once alerted that it had occurred.

Q: **WHAT WAS CUPA'S RESPONSE?**

A: CUPA operations responded to the field activity and noted "Plumber came and fixed check valve and turned sewer curb stop back on." The customer had a plumber fix their failed check valve. Again, the check valve is the customer's property and responsibility to maintain.

<u>Penn Estates service territory</u>

Q: **PLEASE DISCUSS THE AUGUST 2020 WATER OUTAGE EVENT THAT OCCURRED IN THE PENN ESTATES SERVICE TERRITORY WHICH MULTIPLE CUSTOMERS TESTIFIED ABOUT AT THE PUBLIC INPUT HEARING.**

A: In early 2020, tank levels in the Penn Estates system were not able to replenish to their normal levels at night despite all available wells running. Stressed wells started underperforming resulting in 3 well pumps being replaced in 2020 and one subsequently in 2021. During 2020, water usage was elevated due to Covid-19 and more people staying home which further stressed the underperforming wells. Additionally, operators at Penn Estates systematically searched for leaks in the system beginning in early 2020 to confirm whether there were other contributing factors to the tank level issue. A leak detecting company was contracted to look for leaks in targeted areas of the community. In May 2020, CUPA started sending voice reaches (VR) asking customers to conserve water and look for leaks within and around their homes. Also, on May 20, 2020, CUPA started hauling in bulk water to supplement tank levels.

On August 3, 2020, the highest elevation tanks became low for the first time and the company issued a boil water advisory (BWA) and DEP was notified. CUPA rapidly responded to support its customers and provided pallets of bottled water to the customers which were delivered to the community's Welcome Center, and CUPA continued to maintain a constant supply of bottled water for almost 3 weeks at the Welcome Center. In that same time period, operations discovered and repaired 3 large leaks in the system in July through August 2020. CUPA worked closely with DEP to collect the required water samples and the BWA was rescinded on August 13, 2020. To date, CUPA has not received any notice of violations from the incident from DEP.

CUPA received many questions from the Community. A letter explaining what happened was mailed to all customers September 8, 2020. That letter was posted in the Community's monthly newsletter in October 2020.

In total, during 2020 CUPA estimated 11,749,540 gallons in main breaks/leaks were identified and fixed at Penn Estates. Of that total, 7,334,540 gallons (or 62%) in main breaks/leaks were identified and fixed July to August.

Q: **CAN YOU PROVIDE AN OVERVIEW AND TIMELINE OF THE EVENTS JUST DISCUSSED AND CUPA'S EFFORTS TO REMEDY THE AUGUST 2020 PENN ESTATES CRITICAL WATER LEVEL EVENT?**

A: Below is Table 1 summarizing the timeline of the August 2020 Penn Estates event:

Date	CUPA steps taken
5/15/20, 5/18/20, 6/17/20, 6/19/20, 6/22/20, 7/27/20, 7/29/20, 7/31/20, 8/3/20	Sent VRs to customers to conserve water and look for leaks. Operations actively in field looking for leaks.
5/20/20	Started hauling bulk water to supplement tank levels
8/3/20	BWA issued and VR sent to whole system. DEP was notified. Pallets of water were delivered to the community Welcome Center for customers to use.
8/13/20	BWA was rescinded.
8/20/20	Stopped bulk water hauling as tank levels had stabilized
9/8/20	CUPA mailed letter to customers summarizing what happened, what step were taken, and the results of CUPA's repairs correcting the issues
October 2020	Letter posted to Penn Estates Community newsletter

Q: **HAS PENN ESTATES TERRITORY EXPERIENCED ANY OTHER BOIL WATER ADVISORIES?**

A: Penn Estates had no BWAs in 2019. The only BWA in 2020 was during the August 2020 event discussed above. Finally, one BWA was issued so far in 2021 – on 3/12/21 CUPA issued a BWA to 92 affected customers due to a water main break and the BWA was rescinded on 3/15/21. The issuance of a BWA due to a water main break is a common industry practice.

Q: **A FEW CUSTOMERS AT THE PUBLIC INPUT HEARING FROM PENN ESTATES COMPLAINED OF SEDIMENT ISSUES AND CONCERNS FOR THAT BEING THE CAUSE OF DAMAGE TO CUSTOMER APPLIANCE DAMAGE. DO YOU HAVE ANY COMMENTS?**

A: I do not recall sediment complaints being a prevalent issue raised by customers and I reviewed the customer complaints CUPA received from 7/1/2019-6/30/21. During that 2-year period in the Penn Estates territory, CUPA received five related complaints - only one sediment related call and four appliance related calls. Regarding the sediment call, the customer called about red rusty sediment in their pressure gauge located just after the meter. CUPA provided the customer with a new pressure gauge upon investigating the complaint. The four appliance calls were complaints related to the water pressure being too high and either claiming that the pressure damaged their water heater or the heaters pressure reducing valve (PRV). CUPA recommends all homes have PRVs. The maintenance of PRVs is the responsibility of the customer, a fact of which CUPA informed each customer at the time of CUPA's investigation.

Q: **ARE YOU AWARE OF CUPA'S ANNUAL WATER QUALITY REPORTS FOR THE PENN ESTATES SYSTEM?**

A: Yes, I am aware of the annual water quality reports for Penn Estates. CUPA provided the 2018, 2019, and 2020 annual reports to the parties after the public input hearing. See my previous exhibit CUPA Exhibit No. EL-1R.

Q: **DO THE 2018, 2019, OR 2020 ANNUAL REPORTS TO DEP INDICATE CUPA EVER PROVIDED UNSAFE OR INADEQUATE SERVICE IN PENN ESTATES?**

A: No. The 2018 report indicates only one violation for the secondary contaminant, Manganese, and the report further indicates that well 8, the source of the Manganese, was taken offline. In all other aspects, the report only indicates that CUPA failed to retain reporting data for chlorine residuals. The 2019 report indicated that CUPA exceeded the Arsenic standard on one sample, but steps were taken and the issue was resolved. Additionally, CUPA again referenced the Manganese sampling and well 8 as discussed in the 2018 report. Finally, the 2019 report indicated a number of monitoring, record keeping, and reporting violations. Lastly, the 2020 report for Penn Estates shows that CUPA's only violations were for routine monitoring violations. Therefore, CUPA is providing safe and adequate water service in the Penn Estates territory.

<u>Westgate service territory</u>

Q: **AT THE PUBLIC INPUT HEARING, CUSTOMERS VOICED CONCERNS REGARDING CUPA'S HYDRANT AND VALVE EXERCISING IN WESTGATE. PLEASE DISCUSS CUPA'S HYDRANT AND VALVE EXERCISING PROGRAM.**

A: The Westgate hydrant and valve exercising complaints voiced at the public input hearing consisted of hydrant flushing maintenance, beliefs that there is a lack of maintenance on valves, and beliefs of leaking valves. CUPA has a 3-year hydrant operation and maintenance schedule with a new service company, Rogers Hydrant Service, which started in 2020. The schedule includes hydrants being flushed two times per year, and customers receive notice of the flushing at least one day in advance through their on-file preferred communication method I discussed previously.

Regarding valves, CUPA actively maintains and monitors its valves at regular intervals. In 2020, CUPA undertook an extensive valve inspection program on Westgate water mains and generated inspection reports which allowed CUPA to create a strategic plan to isolate areas and insert new valves and/or repair or replace existing valves. Based on the inspection program, CUPA began its valve replacement program in early 2021 and is in the process of replacing valves and inserting additional valves in the system.

Q: **DO YOU HAVE ANYTHING ELSE TO ADD REGARDING THE WESTGATE VALVE EXERCISE AND REPLACEMENT PROGRAM?**

A: Yes. During the 2020 inspection program, 100% of the Westgate system valves were inspected. Seventy-one valves were identified and two in prior system records were found to be non-existent during this inspection. In 2021 and in future years, 50% of valves will be inspected each year in rotation. Valves are grouped into Zone 1 and Zone 2. Zone 1 valves will be exercised in odd number years. Zone 2 will be exercised in even number years. Valve inspections consist of exercising a water valve and filling out an inspection report to detail valve condition findings.

Q: **ARE YOU AWARE OF CUPA'S ANNUAL WATER QUALITY REPORTS FOR THE WESTGATE SYSTEM?**

A: Yes, I am aware of the annual water quality reports for Westgate. CUPA provided the 2018, 2019, and 2020 annual reports to the parties after the public input hearing. See CUPA Exhibit No. EL-1R.

Q: **DO THE 2018, 2019, OR 2020 ANNUAL REPORTS INDICATE CUPA EVER PROVIDED UNSAFE OR INADEQUATE SERVICE IN WESTGATE?**

A: No. CUPA purchases its water in the Westgate system from the City of Bethlehem. The 2018 and 2019 reports indicate no violations, and the 2020 report indicates a single failure to monitor and report violation. Therefore, CUPA is providing safe and adequate water service in the Westgate territory.

<u>Responses to the direct testimony of the Office of Consume Advocates Terry Fought</u>

Q: **DID YOU REVIEW THE TESTIMONY OF TERRY FOUGHT, OCA STATEMENT 4?**

A: Yes. I reviewed the direct testimony of Mr. Fought, and previously addressed some of the testimony above. In addition, I will address some of the issues raised by Mr. Fought not previously discussed below.

Q: **AT PAGE 12, LINE 22 OF OCA STATEMENT 4, MR. FOUGHT PROVIDES TESTIMONY REGARDING STEPS THAT CAN BE TAKEN REGARDING LOW PRESSURES IN THE PENN ESTATES SYSTEM. DO YOU HAVE ANY COMMENTS ON HIS PROPOSAL?**

A: Yes, CUPA has already begun the project engineering and planning Mr. Fought describes. CUPA's contractor, GHD evaluated the system in late 2020 and early 2021

and provided recommendations to improve system operations to minimize loss of service. This report dated February 23, 2021, makes the following recommendations: install new well(s), increase well efficiency, develop a written SOP for loss events, install booster pump to increase pressure in system, hire third party leak detection specialist. CUPA has projected engineering for a new well to start in 2023. CUPA has written a Standard Operating Procedure for water loss events and has a third party leak detection specialist available. GHD has also assisted CUPA in assessing the feasibility of an interconnect with another water system.

Q: **AT PAGE 16, LINE 4 OF OCA STATEMENT 4, MR. FOUGHT PROVIDES TESTIMONY REGARDING THE PENN ESTATES WATER SYSTEM AND DISCOLORATION COMPLAINTS AND WHAT INFORMATION SHOULD BE PROVIDED. DO YOU HAVE ANY COMMENT?**

A: GHD evaluated the system and provided recommendations to improve system operations to minimize loss of service, report dated February 23, 2021. Regarding lowering the well pump, CUPA's well permits would need to be reviewed and amended through DEP to lower a well pump which would be a costly and lengthy process which is not cost effective when compared to possibly permitting a new well for supply. Regarding manganese treatment, GHD has provided a quote to add manganese treatment at well 8. The price to add manganese treatment is not justified compared to the available capacity from the well. Finally, as stated above, engineering for a new well is projected to start in 2023.

Q: **AT PAGE 16, LINE 20 OF OCA STATEMENT 4, MR. FOUGHT PROVIDES TESTIMONY REGARDING THE PENN ESTATES DELIVERED WATER**

DURING THE AUGUST 2020 EVENT AND CUSTOMER COMPLAINTS OF DIRTY WATER. DO YOU HAVE ANY COMMENT?

A: When water was hauled in by truck and pumped into the tank, the water flowing into the tank from the truck stirred sediment on the bottom of the tank resulting in customers experiencing dirty water. When operations realized this was the cause of the dirty water they shut the tank valve prior to water being off loaded to prevent any stirred up sediment from leaving the tank and allowed it to settle prior to reopening the valve. That isolated incident will thus not reoccur.

Q: **AT PAGE 17, LINE 4 OF OCA STATEMENT 4, MR. FOUGHT ASKS THE COMPANY TO EXPLAIN WHY NO BWA NOTICES WERE ISSUED PRIOR TO AUGUST 3, 2020. DO YOU HAVE ANY COMMENT?**

A: Yes, bulk water hauling started 5/20/20 prior to tanks emptying and pressure in the system dropping. As the tanks were not empty and the system still had suitable pressures there was no need for a BWA under the rules and regulations of the Pennsylvania Department of Environmental Protection. Once the tank emptied and pressures in the system were inadequate, CUPA complied with the notice requirements and issued the prompt BWA on August 3.

Q: **AT PAGE 17, LINES 9 AND 14 OF OCA STATEMENT 4, MR. FOUGHT ASKS THE COMPANY TO PROVIDE INFORMATION REGARDING THE FINAL DISPOSITION OF THE 2 ILLNESS RELATED COMPLAINTS IN THE COMPANY'S RECORDS. DO YOU HAVE ANY COMMENT?**

A: Yes. On May 7, 2019, Customer 291 called to "advise that his family became ill in March" and requested to talk to a supervisor. CUPA's Area Manager spoke with

Customer 291 on May 8, 2019. Customer 291 called again May 17, 2019 and requested to speak to Operations Supervisor, "stated he and family became ill and stated it was due to our water supply." CUPA's area manager returned the call and spoke to Customer 291 on May 17, 2019. The manager explained the DEP required wording of the Public Notice the customer received, what happened, and explained the DEP required distribution bacteria samples for March and April were compliant with DEP's regulations. Customer 291 was satisfied with explanation and no further contact was received. Customer 348 called April 30, 2019stating his son was sick during the time reflected in the Public Notice. Area manager spoke to Customer 348 on May 1, 2019, explained the DEP required wording of the Public Notice the customer received and was referring to regarding his concerns, what happened, and explained the DEP required distribution bacteria samples for March and April were compliant. No further contact was received.

Q: **AT PAGE 18, LINE 4 OF OCA STATEMENT 4, MR. FOUGHT ASKS THE COMPANY TO PROVIDE INFORMATION REGARDING COMPLAINTS ABOUT MOLD. DO YOU HAVE ANY COMMENT?**

A: In August 2019, Customer 1023 called Customer Service to report black sediment in toilets and dishwasher. Operations investigated. Chlorine residual from customer's premise was lower than the rest of the area. The first set of water samples came back positive for mold, the second set came back negative. DEP was notified and recommended that a Do Not Drink should not be sent to customers since the source was unknown and it was unknown if it was localized to this one customer or throughout the system. The community is a gated community and Customer 1023 posted her issue on the Community's Facebook page. This resulted in an influx of customer's calling Customer

Service. Staff pulled samples from another residence in the same geographic area and submitted for testing at a third-party laboratory. The certified results from this testing did not indicate the presence of mold. Operations flushed hydrants, went door to door performing Cross Connection Inspections, delivered pallets of bottled water to the community's Club House, and worked closely with Community Management to ensure questions regarding mold were addressed.

Subsequently, Operations discovered closed distribution valves within the community which created dead-ends. This caused chlorine residuals to drop lower than the surrounding area, allowed for sediment to accumulate, and diminished the effectiveness of flushing. These valves were opened, the area was unilaterally flushed, and chlorine was monitored following valve correction to ensure the issue was resolved.

The 9/15/2020 complaint's black residue was originating from their internal plumbing which their plumber confirmed. The 11/3/2020 complaint's pink faucet growth was due to airborne bacteria within her home growing externally on her faucets and unrelated to CUPA's water service.

Q: **AT PAGE 19, LINE 2 OF OCA STATEMENT 4, MR. FOUGHT SUMMARIZES THE FORMAL COMPLAINTS FILED BY CUSTOMERS WITH SERVICE-RELATED COMPLAINTS. DO YOU HAVE ANY COMMENT?**

A: Yes. See my answer above on Page 5. To summarize, based on Tamiment's Customer Service historical complaint log, the formal rate complaints filed that contained service allegations and the complaints made during the 6/29/21 public input hearing are not substantiated.

Q: **AT PAGE 21, LINE 34 OF OCA STATEMENT 4, MR. FOUGHT SUMMARIZES THE PUBLIC INPUT HEARING COMPLAINTS. DO YOU HAVE ANY CORRECTIONS TO THOSE SUMMARIES?**

A: Yes. Janine Marino stated "several years ago when an increase was asked for, it was found that there were severe issues with the tank due to lack of maintenance by the Company." N.T. 48, 50. The "Company" Ms. Marino is referring to is Pennsylvania Utility Company whom CUPA purchased the system from in 2019. The maintenance she is referring to was performed by Pennsylvania Utility Company, not CUPA.

Q: **IN OCA STATEMENT 4 AT PAGE 24, MR. FOUGHT PROVIDES VARIOUS ISSUES WHICH HE REQUESTS THE COMPANY SHOULD ADDRESS REGARDING THE TAMIMENT WATER SYSTEM. PLEASE ADDRESS THIS REQUEST.**

A: Mr. Fought requested that the Company provide recent laboratory tests for total dissolved solids (TDS), sulfate and hardness for each of its two wells to investigate the various water quality complaints raised at the public input hearing which he lists on page 21-22 of OCA Statement 4. However, the Company does not possess any recent laboratory tests for these parameters as they are not required by DEP. Those items requested by Mr. Fought are listed by the EPA as "Secondary Drinking Water Standards" and were created to assist in managing for aesthetic components such as taste, color and odor. Additionally, OCA has not proposed any adjustments to recover the cost of this secondary standard testing in their direct testimony.

<u>Responses to the direct testimony of the Bureau of Investigation and Enforcement's Esyan Sakaya</u>

Q: **DID YOU REVIEW THE TESTIMONY OF ESYAN SAKAYA, I&E STATEMENT NO. 3 FOR WATER AND WASTEWATER?**

A: Yes.

Q: **DO YOU HAVE ANY COMMENTS ON ESYAN SAKAYA'S WATER TESTIMONY?**

A: Yes. I&E's witness Sakaya testified generally to the public input testimony and summarized various concerns raised including sediment, brown water or residue, general low-quality water complaints, and customer's decision to buy bottled water for consumption. I&E Statement No. 3 at 24. While I addressed the majority of these concerns above, I have not addressed the various customer statements that they feel the need to purchase bottled water for drinking and cooking. As shown in CUPA's annual water quality reports which I discussed above, CUPA's water meets all requirements for the PADEP for drinking water standards, and the only violations CUPA received were related to monitoring and reporting requirements or on matters that have been remediated or resolved by the Company. If a customer chooses not to consume CUPA's water despite meeting all health-related requirements of the PADEP, that decision is of the consumer alone.

Additionally, I&E's witness Sakaya states that customers testified that the Company does not timely notify customers of boil water advisories. I discussed previously the customer notification issues for updated contact information and preferred method. In addition, I

would note that each of CUPA's BWA's were issued in compliance with PADEP's regulations in 25 Pa. Code Chapter 109 regarding public notification.

Formal Complaints filed against rate case

Q: **ARE YOU AWARE OF THE AMOUNT OF FORMAL COMPLAINTS THAT HAVE BEEN FILED AGAINST THE RATE INCREASE REQUEST BY CUPA?**

A: Yes, I am advised by Counsel that there were almost 100 formal complaints filed by customers regarding the rate increase request. While I have not reviewed each complaint in detail, less than 10 of those complaints make any reference to any quality of service concerns, whether that be water quality, low pressure, or other related concerns. OCA's Mr. Fought found a similar result and identified only seven of the formal complaints discussing quality of service issues (all of which he referenced were in the Tamiment system). See OCA Statement No. 4 at 19.

Q: **WHAT DOES THAT INDICATE TO YOU REGARDING THE QUALITY OF SERVICE COMPLAINTS RAISED AT THE PUBLIC INPUT HEARING?**

A: It shows that these complainants do not like rate increases. While customers at the public input hearings provided complaints regarding quality of service, as I previously discussed very few of these complaints were previously raised to CUPA or to customer service based on the Company's complaint log, and even less were described by customers in their formal complaints filed with the Commission. CUPA takes pride in its safe and reliable service, and while the public input hearing elicited service related allegations from customers, CUPA can only respond to, investigate, and address concerns customers actually relay to the company. As I discussed above, when concerns are raised by customers, CUPA has shown and proven it swiftly responds to and assists customer with

their concerns – a practice that CUPA will continue to employ in all aspects of customer relations.

Q: **DOES THIS CONCLUDE YOUR PREPARED REBUTTAL TESTIMONY?**

A: Yes, however I reserve the right to supplement or make corrections to this testimony.

CUPA Exhibit No. EL-1R

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2018

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2018. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2018. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

MY UTILITY CONNECT

DOWNLOAD OUR MOBILE APP!

- Pay utility bill
- Manage account settings
- Monitor usage
- Connect with Customer Service

How Easy Is My Utility Connect to Find?
Go to www.uiwater.com/pennsylvania or search "MyUtilityConnect" in the App Store or Google Play Store.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A source water assessment of the Towamensing, Walcksville and the Trimmers Rock geologic aquifer, which supplies water for Community Utilities of Pennsylvania, Inc. was completed by the PA Department of Environmental Protection (PADEP).

Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

More information is available at www.bethlehem-pa.gov. Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.	
Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2018.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

Water quality violations are noted within the Water Quality Tables. In addition, please see the last page of the report for additional information.

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Sample Period	Units	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper						
Jan. – June 2018 Monitoring Period	ppm	0.64	3 of 40 samples	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
July – Dec. 2018 Monitoring Period	ppm	0.77	5 of 40 samples	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead						
Jan. – June 2018 Monitoring Period	ppb	1.76	0 of 40 samples	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
July – Dec. 2018 Monitoring Period	ppb	2.42	0 of 40 samples	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Arsenic (ppb)	2018	N	9.05	ND - 15.7	0	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2018	N	0.0127	ND - 0.0421	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

One sample collected for arsenic in 12/2018 showed a level above 10 ppb which did not result in a violation during 2018. After a verification sample was collected in 1/2019 which also resulted in a level above 10 ppb, customers were notified on 2/5/19 of the elevated arsenic results. Measures have been taken to lower the levels and increased monitoring has shown the levels below the MCL. Customers will be notified if the average were to exceed the MCL. Please see the following for EPA's required language: *Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.*

Nitrate/Nitrite Contaminants

Nitrate (as Nitrogen) (ppm)	2018	N	0.4	ND - 0.70	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Volatile Organic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Ethylbenzene (ppb)	2018	N	0.15	N/A	700	700	Discharge from petroleum refineries
Toluene (ppm)	2018	N	0.00011	N/A	1	1	Discharge from petroleum refineries
Xylenes (ppm)	2018	N	0.0013	N/A	10	10	Discharge from petroleum refineries; Discharge from chemical factories
Chloroethane (ppb)	2018	N	0.0428	N/A	N/A	N/A	Byproduct of drinking water chlorination
Chloromethane (ppb)	2018	N	0.0380	N/A	N/A	N/A	Byproduct of drinking water chlorination
4-methyl-2-pentanone (ppb)	2017	N	0.89	N/A	N/A	N/A	N/A

Water Quality Test Results

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Manganese (ppm)	2018	Y	0.144	ND - 0.798	N/A	0.05	Erosion of natural deposits
Well 8, which is 1 of 7 wells within the water system, exceeded the EPA Lifetime Health Advisory level for Manganese. Well 8 has been taken offline and an assessment is being done to see if further treatment is needed. Although manganese is an essential nutrient at low doses, chronic exposure to high doses may pose health risks. There is little data for the consumption exposure to manganese and health effects. Manganese is considered a secondary contaminant with a Secondary Maximum Contaminant Level (SMCL). SMCL's are not health-based standards; rather they are set for aesthetic effects. Excess manganese could produce a brownish color in laundered goods, impair the taste of tea, coffee, and other beverages and may cause a dark brown or black stain on porcelain plumbing fixtures.							
Chloride (ppm)	2018	N	37	22 - 54	N/A	250	Erosion of natural deposits
Sulfate (ppm)	2018	N	16	11 - 23	N/A	250	Erosion of natural deposits
*Copper (ppm)	2017	N	0.635	0.635	N/A	1.0	Erosion of natural deposits, leeching from wood preservatives
**The copper sample was collected at the water plant and was not collected as part of the Lead and Copper rule.*							

Radiological Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Combined Radium (pCi/l) (Radium-228)	2015	N	1.09	1.09	0	5	Erosion of natural deposits

Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2018	N	1.19	0.21 - 3.41	MRDLG = 4	MRDL = 4	Water additive used to control microbes

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2018	27.6	23.2 - 35.6
Magnesium	2017	6.29	N/A

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MAINTAIN RECORDS

ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA DE BEBER. TRADUZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

Recordkeeping Requirements Not Met for well 5 entry point 105

Recordkeeping Requirements Not Met for well 6 entry point 106

Recordkeeping Requirements Not Met for well 7 entry point 107

We violated a drinking water requirement.

We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

What should I do?

There is nothing you need to do at this time. You may continue to drink the water. If a situation arose where the water is no longer safe to drink, you will be notified within 24 hours.

What happened? What was done?

The chlorine analyzer at well 6 failed to record chlorine residuals from 2/1/19 to 3/14/19. This was corrected on 3/14/19.

The chlorine analyzer at well 7 failed to record chlorine residuals from 3/19/19 to 4/4/19. This was corrected on 4/4/19.

The chlorine analyzer at well 5 failed to record chlorine residuals from 4/9/19 to 5/2/19. This was corrected on 5/2/19.

The chlorine analyzer at well 7 failed to record chlorine residuals from 4/4/19 to 5/1/19. This was corrected on 5/1/19.

Community Utilities of Pennsylvania, Inc. is taking steps to resolve communication issues between chlorine analyzers and data collection equipment. Steps are also being taken to create a redundant chlorine residual data collection system. Corrective steps are expected to be completed by September 2019. The February, March, and April chlorine residual monitoring within the distribution system, as required by DEP, was within compliance.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, Maryland 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with CCR

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

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Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.**

For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

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Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.
The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.	
Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2019.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Sample Period	Units	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper						
Jan. – June 2018 Monitoring Period	ppm	0.64	3 of 40 samples	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
July – Dec. 2018 Monitoring Period	ppm	0.77	5 of 40 samples			
Jan — Jun 2019 *Represents sampling outside of compliance period	ppm	0.24-0.899	0 of 2 samples			
*Additional individual samples were collected in 2019 with 0 of 2 samples exceeding the copper AL. *Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.*						
Lead						
Jan. – June 2018 Monitoring Period	ppb	1.76	0 of 40 samples	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits.
July – Dec. 2018 Monitoring Period	ppb	2.42	0 of 40 samples			
Jan — Jun 2019 *Represents partial sampling outside of compliance period	ppb	ND-37	1 of 2 samples			
*Additional individual samples were collected in 2019 with 1 of 2 samples exceeding the lead AL at 37 ppb. *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*						

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Radiological Contaminants							
Combined Radium (pCi/l) (Radium-228)	2015	N	1.09	1.09	0	5	Erosion of natural deposits
Inorganic Contaminants							
Arsenic (ppb)	2019	Y*	4.8	ND - 27.5	0	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2018	N	0.0127	ND - 0.0421	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
*The issue has been resolved. One sample collected for arsenic in 12/2018 showed a level above 10 ppb which did not result in a violation during 2018. After a verification sample was collected in 1/2019 which also resulted in a level above 10 ppb, customers were notified on 2/5/19 of the elevated arsenic results. Measures have been taken to lower the levels and increased monitoring has shown the levels below the MCL. Customers will be notified if the average were to exceed the MCL. Please see the following for EPA's required language: *Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system,*							
Nitrate/Nitrite Contaminants							
Nitrate (as Nitrogen) (ppm)	2019	N	0.18	ND - 0.55	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Water Quality Test Results

Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2019	See Violation Section	1.34	0.46 - 2.09	MRDLG = 4	MRDL = 4	Water additive used to control microbes

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCL	Likely Source of Contamination
*Manganese (ppm)	2018-2019	Y	0.1191	ND - 0.798	0.05	Erosion of natural deposits
Iron (ppm)	2019	N	ND	ND	1.0	Erosion of natural deposits
Chloride (ppm)	2018	N	37	22 - 54	250	Erosion of natural deposits
Sulfate (ppm)	2018	N	16	11 - 23	250	Erosion of natural deposits
**Lead (ppm)	2019	N	ND	ND	0.015	Erosion of natural deposits, leeching from wood preservatives

**Well 8, which is 1 of 7 wells within the water system, exceeded the EPA Lifetime Health Advisory level for Manganese in 2018. Well 8 has been taken offline and an assessment is being done to see if further treatment is needed. Although manganese is an essential nutrient at low doses, chronic exposure to high doses may pose health risks. There is little data for the consumption exposure to manganese and health effects. Manganese is considered a secondary contaminant with a Secondary Maximum Contaminant Level (SMCL). SMCL's are not health-based standards; rather they are set for aesthetic effects. Excess manganese could produce a brownish color in laundered goods, impair the taste of tea, coffee, and other beverages and may cause a dark brown or black stain on porcelain plumbing fixtures.*

***The lead samples was collected in raw water and was not collected as part of the Lead and Copper rule.*

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2018	27.6	23.2 - 35.6
Magnesium	2017	6.29	N/A

PFAS Testing

Community Utilities of Pennsylvania, Inc. is currently conducting statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Notification has or will be sent to all registered customers of the testing results once completed.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Additional Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2019:

Haloacetic Acids (HAA5)

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE (DBP), MAJOR	09/05/2019	09/30/2019 - Result ND (MCL 60 ppb)	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Sample taken 9/30/19.

Total Trihalomethanes (TTHM)

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE (DBP), MAJOR	09/05/2019	10/17/2019 - Result ND (MCL 80ppb)	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Sample taken 10/17/2019.

Groundwater Rule/Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Recordkeeping Requirements Not Met for well 6 entry point 106	02/01/2019	03/14/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 7 entry point 107	03/19/2019	04/04/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 5 entry point 105	04/09/2019	05/02/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Recordkeeping Requirements Not Met for well 7 entry point 107	04/04/2019	05/01/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	06/28/2019	06/28/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	03/11/2019	3/12/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	03/22/2019	03/23/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Failure to maintain 4-log inactivation for well 2 entry point 102	04/06/2019	04/06/2019	We failed to maintain 4-log inactivation for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to monitor or report for the disinfectant specified.	3/21/19	3/31/19	PA DEP received the report late. Compliance has been achieved.

Revised Total Coliform Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to properly collect or analyze RTCR routine samples.	9/23/19	10/7/19	PA DEP received the report late. Compliance has been achieved.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Haloacetic Acids (HAA5) and Total Trihalomethanes (TTHM)

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. Haloacetic Acid and Trihalomethane samples were required to be collected on 09/05/2019. We failed to collect them on 09/05/2019 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for Haloacetic Acids and Trihalomethanes and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
HAA5	1/year	1	09/05/2019	09/30/2019
TTHM	1/year	1	09/05/2019	10/17/2019

What happened? What was done?

PA DEP requires that HAA5 and TTHM samples be taken 09/05/2019. Samples were taken late on 09/30/2019 and 10/17/2019, both results were ND.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, MD 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with Annual 2019 CCR

Community Utilities of Pennsylvania, Inc.
Penn Estates Water System

PWS ID: **PA2450065**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual.

The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet. For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from seven wells that draw groundwater from three aquifers, Towamensing, Walcksville and the Trimmers Rock in Monroe County located within community boundaries in the Stroud Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A source water assessment of the Towamensing, Walcksville and the Trimmers Rock geologic aquifer, which supplies water for Community Utilities of Pennsylvania, Inc. was completed by the PA Department of Environmental Protection (PADEP).

Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

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Please call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

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A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
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In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
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Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

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Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

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⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

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We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

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Water Quality Test Results

Lead and Copper Contaminants - Regulated at the Consumers' Tap

Contaminant (Units)	Sample Date	Action Level (AL)	MCLG	90th Percentile Value	# of sites Above AL of Total Sites	Violation	Likely Source of Contamination
Copper (ppm)	2020	1.3	1.3	1.16	3 out of 40	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb)	2020	15	0	3.0	3 out of 40	N	Corrosion of household plumbing systems, erosion of natural deposits.

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.*
Lead*: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

Chemical Contaminants

Contaminant (units)	Sample Date	MCL/MRDL Violation Y/N	Your Water Average	Range Low-High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2020	N	1.89	0.3 - 2.86	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Nitrate (as Nitrogen) (ppm)	2020	N	0.81	ND - 7.32	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Nitrate *in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.*

Secondary Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCL	Likely Source of Contamination
Sulfate (ppm)	2018	N	16	11 - 23	250	Erosion of natural deposits
**Lead (ppb)	2020	N	10	ND– 48	15	Erosion of natural deposits
**Copper (ppm)	2020	N	0.307	ND-0.578	1.3	Erosion of natural deposits, leeching from wood preservatives

***Lead and Copper samples were collected at Entry Point and was not collected as part of the Lead and Copper rule.*

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water Average	Range Low High	MCLG	MCL	Likely Source of Contamination
Arsenic (ppm)	2020	N	0.002	0.002 - 0.002	0	0.01	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes

Other Miscellaneous Water Characteristics - Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low High
Calcium (ppm)	2020	21.43	17.7 - 24.0
Magnesium	2017	6.29	N/A

PFAS Testing

Community Utilities of Pennsylvania, Inc., Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.
For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

PFAS Results (***All results reported as Nanograms per liter (ng/L)***)

Contaminant	Sample Date	Range of Detect	Average	EPA Advisory	Below HAL
PFOS	2020	ND - 2.2	<2.0	70	Yes
PFOA	2020	ND - 2.0	<2.0	70	Yes
Combined PFOS + PFOA	2020	ND - 4.2	2.1	70	Yes

Terms and Abbreviations:

- **PFOS** – Perfluorooctane Sulfonate
- **PFOA** – Perfluorooctanoic Acid
- **Health Advisory Level (HAL)** – To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA established the healthadvisory levels at 70 parts per trillion.
- **Ng/L** – Nanograms per liter(ng/L) which equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.
- **ND (No Detect)** - No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters.

Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2020:

Synthetic Organic Chemicals (SOCs)

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine	10/20/2020	12/29/2020	We failed to test our drinking water for the contaminant during the period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. Samples were missed in the 3rd quarter. They were taken in the 4th quarter 12/29/2020, the results were non-detect.

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for EP108 Synthetic Organic Compounds (SOCs).

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. SOC samples were required to be collected within the 3rd quarter of 2020. We failed to collect them within the 3rd quarter of 2020 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for SOCs and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
SOC	1 in 2nd Quarter 1 in 3rd Quarter	1 in 2nd Quarter	1 in 2nd Quarter 1 in 3rd Quarter	12/29/2020

What happened? What was done?

PA DEP requires that EP108 SOC samples be taken every 3 years during 2nd and 3rd quarters. Samples were missed in the 3rd quarter. They were taken in the 4th quarter 12/29/2020, the results were non-detect.

For more information, please contact Emily Long at 1-800-638-0262 or P.O. Box 379, Dunkirk, MD 20754.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 2450065 Date distributed: Direct Mail with Annual 2020 CCR

Community Utilities of Pennsylvania, Inc.
Tamiment Resort Water System

PWS ID: **PA2520070**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2019. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2019. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.**
For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from three wells that draw groundwater from three aquifers in Pike County located within community boundaries in the Lehman Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A Source Water Assessment of our source(s) was completed by the PA Department of Environmental Protection (PA. DEP). The Assessment has found that our source(s) of is/are potentially most susceptible to Low Density Development, Golf Courses, Major Roads, UST sites, Agriculture and Municipal Waste. Overall, our source(s) has/have moderate risk of significant contamination. Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754-0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

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We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

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Parts per quadrillion (ppq)	One parts per quadrillion, or picograms per liter
Parts per trillion (pptt)	One parts per trillion, or nanograms per liter
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Water Quality Test Results

Lead and Copper

Sample Period	Units	90th Percentile Value	# of Sites Above AL of Total Sites	Action Level (AL)	MCL	Likely Source of Contamination
Copper 6/1/19-9/30/19	ppm	0.171	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead 6/1/19-9/30/19	ppb	0	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Chemical Contaminants

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Trihalomethanes (ppb)	80	80	7.4	1.1-7.4	9/5/19	N	By-product of drinking water chlorination
Nitrate (mg/l)	10.0	10.0	0.317	0.315-0.320	10/3/19	N	Run-off from fertilizer use, leaching septic tanks and sewage
Chlorine (mg/l)	4	4	1.43	0.66-3.15	2019	See Violation Section	Water additive used to control microbes
Radium 226 (pCil)	5	5	0	0–0.02	4/16/15	N	Erosion of natural deposits
Radium 228 (pCil)	5	5	0	0-0.48	4/16/15	N	Erosion of natural deposits

Microbial

Contaminants	TT	MCLG	Assessments/ Corrective Actions	Highest # or % of Positive Samples	Violation Y/N	Sources of Contamination
Total Coliform Bacteria	Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement	N/A	None required	1	N	Naturally present in the environment.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.

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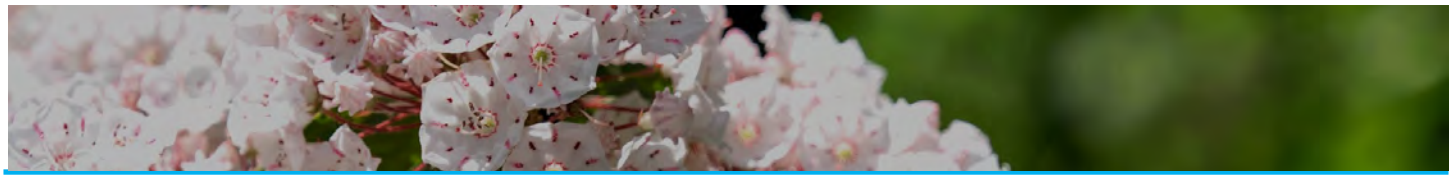


Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2019:

Groundwater Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Recordkeeping Requirements Not Met for well 1 & 3 entry point 101 & 103	08/01/2019	08/14/2019	We failed to retain data collected for chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for distribution sampling	08/05/2019	09/022019	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for distribution sampling	04/09/2020	04/23/20209	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).
Monitoring Requirements Not Met for well 1 & 3 entry point 101 & 103	3/10/2020	3/11/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF SAFE DRINKING WATER

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MAINTAIN RECORDS

ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA DE BEBER. TRADUZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

Recordkeeping Requirements Not Met for Well 1 and Well 3 entry point chlorine residuals.

We violated a drinking water requirement.

We failed to retain written records about our recycled flows in accordance with the Filter Backwash Recycling Rule.

We failed to notify the Department that we are recycling our waste stream.

X We incurred a record keeping violation under the Safe Drinking Water Act.

What should I do?

There is nothing you need to do at this time. You may continue to drink the water. If a situation arised where the water is no longer safe to drink, you will be notified within 24 hours.

What happened? What was done?

Community Utilities of Pennsylvania acquired the Pennsylvania Utilities Company water system on 8/14/19. The well 1 and 3 entry point chlorine residual records taken by Pennsylvania Utilities Company for 8/1/19-8/13/19 could not be found. When Community Utilities of Pennsylvania acquired the system on 8/14/19, operations started monitoring chlorine and maintaining records.

For more information, please contact Emily Long - P.O. Box 379, Dunkirk, MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania.

PWS ID#: 2520070
Date distributed: Direct Mail with Annual 2019 CCR

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Distribution Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd, 3rd, 4th, and 5th weeks of August we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of August	2/week	2/week

What happened? What was done?

Community Utilities of Pennsylvania acquired the Pennsylvania Utilities Company water system on 8/14/19. DEP's Drinking Water Reporting System states that 2 distribution chlorine samples are required per month. On 9/10/19 DEP informed Community Utilities of Pennsylvania that 2 distribution chlorine samples are required per week. Starting September 2019, Community Utilities of Pennsylvania will ensure 2 distribution chlorine samples are monitored per week.

For more information, please contact Emily Long - P.O. Box 379, Dunkirk, MD 20754 at 1-800-638-0262..

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania.

PWS ID#: 2520070 Date distributed: Direct Mail with Annual 2019 CCR

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for Distribution and Entry Point Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd and 3rd weeks of March we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time. On 3/10/2020 we did not monitor entry point chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and entry point chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of March, 2 during the 4th week of March	2/week	2/week
Entry Point Chlorine	2/day	2/day every day in March except 3/10/2020	2/day	2/day

What happened? What was done?

The water operator failed to collect distribution samples the 2nd and 3rd weeks of March. The water operator also failed to collect entry point samples March 10th. This water operator is no longer employed by the company.

For more information, please contact Emily Long – PO Box 379, Dunkirk MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you Community Utilities of Pennsylvania.

PWS ID#: 2520070 Date distributed: Direct Mail with Annual 2019 CCR

Community Utilities of Pennsylvania, Inc.
Tamiment Resort Water System

PWS ID: **PA2520070**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.
Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual. The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet.
For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Your water is supplied from three wells that draw groundwater from three aquifers in Pike County located within community boundaries in the Lehman Township. An aquifer is a geological formation that contains water.

Source Water Assessment

A Source Water Assessment of our source(s) was completed by the PA Department of Environmental Protection (PA. DEP). The Assessment has found that our source(s) of is/are potentially most susceptible to Low Density Development, Golf Courses, Major Roads, UST sites, Agriculture and Municipal Waste. Overall, our source(s) has/have moderate risk of significant contamination. Summary reports of the assessment are available by writing to, Community Utilities of Pennsylvania, Inc. P.O. Box 379, Dunkirk, Maryland 20754 -0379 and on the PADEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

Complete reports were distributed to municipalities, water suppliers, local planning agencies and PADEP offices. Copies of the complete report are available for review at the PADEP Northeast Regional Office, Records Management Unit at (570) 826-2511.

The assessment found 11 individual potential pollution point activities in the area:

The highest risk of threat of potential pollution to the water system by activity quantity is Quarry, swimming pools and wastewater treatment plants.

Category	Quantity	Greatest Percentage
Agricultural	0	
Commercial	0	
Industrial	1	Quarry
Miscellaneous	9	Wastewater Treatment Plant
Residential	1	Swimming Pool

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items.
For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Millirems per year (Mrem/year)	A measure of radiation absorbed by the body.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Parts per quadrillion (ppq)	One parts per quadrillion, or picograms per liter
Parts per trillion (pptt)	One parts per trillion, or nanograms per liter
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/

Water Quality Test Results

Inorganic Chemicals

Contaminant (Units)	Sample Date	Action Level (AL)	MCLG	90th Percentile Value	# of sites Above AL of Total Sites	Violation	Likely Source of Contamination
Copper (ppm)	2019	1.3	1.3	0.171	0	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb)	2019	15	0	0	0	N	Corrosion of household plumbing systems, erosion of natural deposits.

Radiological Contaminants

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Radium 226 (pCil)	5	5	0	0–0.02	4/16/15	N	Erosion of natural deposits
Radium 228 (pCil)	5	5	0	0-0.48	4/16/15	N	Erosion of natural deposits

Disinfectant / Disinfection By-Products

Contaminant (Units)	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Sample Date	Violation Y/N	Sources of Contamination
Trihalomethanes (ppb)	80	80	1.1	1.1 - 1.1	09/2020	N	By-product of drinking water chlorination
Chlorine (mg/l)	4	4	1.15	0.40 - 1.72	2020	See Violation Section	Water additive used to control microbes

PFAS Testing

Community Utilities of Pennsylvania, Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) were tested during 2020 with no detection. No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters. Nanograms per liter (ng/L) equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations

Please see the following violations that Community Utilities of Pennsylvania, Inc. received in 2020:

Groundwater Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring Requirements Not Met for well 1 & 3 entry point 101 & 103	3/10/2020	3/11/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

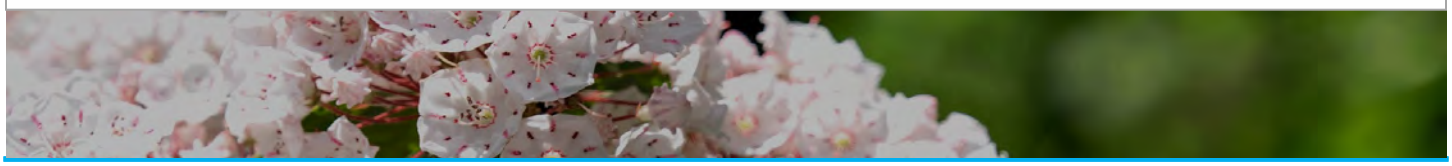
Revised Total Coliform Rule

Violation Type	Violation Begin	Violation End	Violation Explanation
Failure to Properly Collect or Analyze RTCR Routine Samples	04/09/2020	04/23/2020	We failed to monitor chlorine residuals in accordance with PA Code Chapter 109.301(1)(D).

Chlorine

Violation Type	Violation Begin	Violation End	Violation Explanation
Reporting, Routine	6/10/2020	7/15/2020	We failed to report 2 distribution sample results to the PADEP by the required reporting date. Results were submitted on 7/15/2020.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/



IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

FAILURE TO MONITOR

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Monitoring Requirements Not Met for Distribution and Entry Point Chlorine Monitoring

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2nd and 3rd weeks of March we did not monitor distribution chlorine and therefore cannot be sure of the quality of our drinking water during that time. On 3/10/2020 we did not monitor entry point chlorine and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for distribution chlorine and entry point chlorine and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were or will be taken
Distribution Chlorine	2/week	2 during the 1st week of March, 2 during the 4th week of March	2/week	2/week
Entry Point Chlorine	2/day	2/day every day in March except 3/10/2020	2/day	2/day

What happened? What was done?

The water operator failed to collect distribution samples the 2nd and 3rd weeks of March. The water operator also failed to collect entry point samples March 10th. This water operator is no longer employed by the company.

For more information, please contact Emily Long – PO Box 379, Dunkirk MD 20754 at 1-800-638-0262.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you Community Utilities of Pennsylvania.

PWS ID#: 2520070 Date distributed: Direct Mail with Annual 2019 CCR

Community Utilities of Pennsylvania, Inc.
Westgate Water System

PWS ID: **PA3480024**

Annual Water Quality Report 2018

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2018. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2018. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

MY UTILITY CONNECT

DOWNLOAD OUR MOBILE APP!

- Pay utility bill
- Manage account settings
- Monitor usage
- Connect with Customer Service

How Easy Is My Utility Connect to Find?

Go to www.uiwater.com/pennsylvania or search "MyUtilityConnect" in the App Store or Google Play Store.

Source of Drinking Water

Our water is purchased water from City of Bethlehem.

Source Water Assessment

A Source Water Assessment of the Tunkhannock Creek Intake, which supplies surface water to the Bethlehem Filtration Plant, was completed in 2001 by Spotts, Stevens and McCoy, Inc. for the PA DEP. The Assessment has found that the Tunkhannock Intake is potentially most susceptible to road deicing materials, accidental spills along roads and leaks in underground storage tanks. Overall, the Tunkhannock Creek Watershed has high risk of significant contamination. In the event that monitoring of either the raw or finished water identifies or detects any of these contaminants then additional required health effects information will be included in this report noting these detections and attempting to identify the potential source(s) of the contamination.

Complete reports were distributed to the City of Bethlehem's Water Bureau, local municipalities, county planning agencies and PA DEP offices. Copies of the complete report are available from the PA DEP Northeast Regional Office, Records Management Section at (570) 826-5472. A summary report of the Assessment is available on the PA DEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

A Source Water Assessment of the Wild Creek Watershed was conducted. Copies of the final July, 2004 Report are available from the PA DEP Regional Office, Records Management Section. The final assessment found that the Wild Creek Watershed is potentially most susceptible to individual point source activities including above ground storage tanks and underground petroleum storage tanks and to non-point source activities including fuel oil storage tanks, household cleaning supplies, highway spills, highway salt applications, lawn care supplies, on-lot sewage disposal, petroleum pipelines, swimming pools, wells (abandoned or active) and bore holes (abandoned or active). Overall, because of all the potential threats identified near the water supply, the adoption of a source water protection plan was recommended. More information is available at http://www.bethlehem-pa.gov. call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2018.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

In 2018, Community Utilities of Pennsylvania, Inc. performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received **no violations** from PADEP and was in compliance with applicable testing and reporting requirements.

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Water Quality Test Results - Community Utilities of Pennsylvania, Inc. Westgate

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90th percentile)	2016	0.107	None	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	2016	5	None	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectant / Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine, Total (ppm)	2018	No	1.24	1.18 - 1.34	MRDLG = 4	MRDL = 4	Water additive used to control microbes
TTHM (ppb) (Site 701) Total Trihalomethanes]	2018	No	52.075	29.2 - 81.6	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) (Site 701) [Total Haloacetic Acids]	2018	No	25.1	N/A	N/A	60	By-product of drinking water disinfection
TTHM (ppb) (Site 702) Total Trihalomethanes]	2018	No	46.6	N/A	N/A	80	By-product of drinking water disinfection
HAA5 (ppb) (Site 702) [Total Haloacetic Acids]	2018	No	36.375	26.4 - 50.8	N/A	60	By-product of drinking water disinfection

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Water Quality Test Results - City of Bethlehem, PA

Inorganic Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2017	N	<1.0	N/A	2	2*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

The City of Bethlehem has been adding Fluoride to their drinking water since June 1971.
**EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.*

Turbidity

Contaminant (units)	MCL Violation Y/N	Your Water	Lowest Monthly % of samples meeting TT	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	No	0.044	100%	N/A	TT = 1 NTU	Soil runoff

Turbidity *is a measure of the cloudiness of the water. The City of Bethlehem monitors it because it is a good indicator of the effectiveness of the filtration system.*
NTU *(Nephelometric Turbidity Units) - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.*
Treatment Technique (TT) *- A required process intended to reduce the level of a contaminant in drinking water. For turbidity this means any monthly sample greater than 1 NTU or 95% of the monthly samples are greater than or equal to 0.3 NTU.*

Unregulated Contaminant Monitoring*

Contaminant (units)	Reported Level	Range	Major Sources
Strontium	12.25 ug/L	10.8 - 15.4 ug/L	Naturally occurring element
Chromium	0.27 ug/L	0.16 - 0.40 ug/L	Naturally occurring element
Chromium, hexavalent	0.066 ug/L	0.05 - 0.08 ug/L	Naturally occurring element
4-androstene-3,17-dione	0.00079 ug/L	ND - 0.00079 ug/L	Steroidal hormone naturally produced in the body

**Unregulated Contaminant Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.*

Community Utilities of Pennsylvania, Inc.
Westgate Water System

PWS ID: **PA3480024**

Annual Water Quality Report 2019

Message from Steve Lubertozzi, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2019. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2019. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens. Based on current evidence, the risk to water supplies is low. **You can continue to use and drink water from your tap as usual.**
EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. **Disinfecting wipes and other items should be disposed of in the trash, not the toilet.** For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Our water is purchased water from City of Bethlehem.

Source Water Assessment

A Source Water Assessment of the Tunkhannock Creek Intake, which supplies surface water to the Bethlehem Filtration Plant, was completed in 2001 by Spotts, Stevens and McCoy, Inc. for the PA DEP. The Assessment has found that the Tunkhannock Intake is potentially most susceptible to road deicing materials, accidental spills along roads and leaks in underground storage tanks. Overall, the Tunkhannock Creek Watershed has high risk of significant contamination. In the event that monitoring of either the raw or finished water identifies or detects any of these contaminants then additional required health effects information will be included in this report noting these detections and attempting to identify the potential source(s) of the contamination.

Complete reports were distributed to the City of Bethlehem's Water Bureau, local municipalities, county planning agencies and PA DEP offices. Copies of the complete report are available from the PA DEP Northeast Regional Office, Records Management Section at (570) 826-5472. A summary report of the Assessment is available on the PA DEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

A Source Water Assessment of the Wild Creek Watershed was conducted. Copies of the final July, 2004 Report are available from the PA DEP Regional Office, Records Management Section. The final assessment found that the Wild Creek Watershed is potentially most susceptible to individual point source activities including above ground storage tanks and underground petroleum storage tanks and to non-point source activities including fuel oil storage tanks, household cleaning supplies, highway spills, highway salt applications, lawn care supplies, on-lot sewage disposal, petroleum pipelines, swimming pools, wells (abandoned or active) and bore holes (abandoned or active). Overall, because of all the potential threats identified near the water supply, the adoption of a source water protection plan was recommended. More information is available at http://www.bethlehem-pa.gov. call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.	
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Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

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⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

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For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2019.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

In 2019, Community Utilities of Pennsylvania, Inc. performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received **no violations** from PADEP and was in compliance with applicable testing and reporting requirements.

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Water Quality Test Results - Community Utilities of Pennsylvania, Inc. Westgate

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90th percentile)	2019	0.068	None	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	2019	ND	None	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

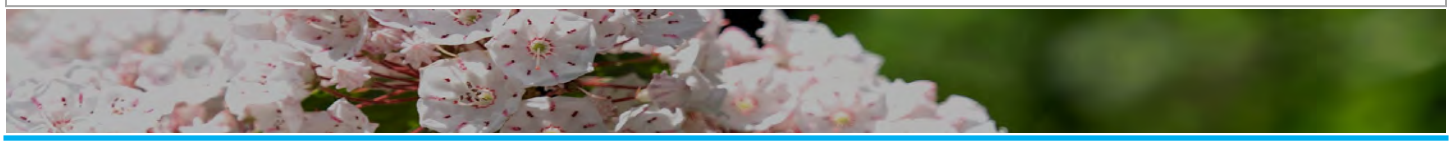
Disinfectant / Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine, Total (ppm)	2019	No	0.99	0.23 - 1.37	MRDLG = 4	MRDL = 4	Water additive used to control microbes
TTHM (ppb) Total Trihalomethanes]	2019	No	30.6	13.8 - 37.1	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	2019	No	23.1	13.2 - 33.9	N/A	60	By-product of drinking water disinfection

PFAS Testing

Community Utilities of Pennsylvania, Inc. is currently conducting statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Notification has or will be sent to all registered customers of the testing results once completed.
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/



2019 Water Quality Test Results - City of Bethlehem, PA

Inorganic Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2019	N	<1.0	N/A	4	4*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

The City of Bethlehem has been adding Fluoride to their drinking water since June 1971.
**EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.*

Turbidity

Contaminant (units)	MCL Violation Y/N	Your Water	Lowest Monthly % of samples meeting TT	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	No	0.045	100%	N/A	TT = 1 NTU	Soil runoff

Turbidity *is a measure of the cloudiness of the water. The City of Bethlehem monitors it because it is a good indicator of the effectiveness of the filtration system.*
NTU *(Nephelometric Turbidity Units) - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.*
Treatment Technique (TT) *- A required process intended to reduce the level of a contaminant in drinking water. For turbidity this means any monthly sample greater than 1 NTU or 95% of the monthly samples are greater than or equal to 0.3 NTU.*

Unregulated Contaminant Monitoring*

Contaminant (units)	Reported Level	Range	Major Sources
Chromium	0.24 ug/L	0.16 - 0.33 ug/L	Naturally occurring element
Chromium, hexavalent	0.064 ug/L	0.050 - 0.080 ug/L	Naturally occurring element
Manganese	2.80 ug/L	2.25 - 3.98 ug/L	Naturally occurring element
Strontium	11.18 ug/L	10.80 -11.70 ug/L	Naturally occurring element
4-androstene-3,17-dione	0.00079 ug/L	ND - 0.00079 ug/L	Steroidal hormone naturally produced in the body
Bromochloroacetic Acid	1.48 ug/L	0.47 - 2.13 ug/L	By-product of drinking water chlorination
Bromodichloroacetic Acid	1.72 ug/L	1.21 - 3.24 ug/L	By-product of drinking water chlorination
Dichloroacetic Acid	13.34 ug/L	1.35 - 27.2 ug/L	By-product of drinking water chlorination
Monochloroacetic Acid	2.84 ug/L	ND - 2.84 ug/L	By-product of drinking water chlorination
Trichloroacetic Acid	19.22 ug/L	5.76 - 29.3 ug/L	By-product of drinking water chlorination

**Unregulated Contaminant Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.*

Community Utilities of Pennsylvania, Inc.
Westgate Water System

PWS ID: **PA3480024**

Annual Water Quality Report 2020

Message from Bryce Mendenhall, President

Dear Community Utilities of Pennsylvania, Inc. Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure that you, our customer, are our top priority and that we are providing the highest quality service – now and in the years to come.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Community Utilities of Pennsylvania, Inc., should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual. The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet.

For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Our water is purchased water from City of Bethlehem.

Source Water Assessment

A Source Water Assessment of the Tunkhannock Creek Intake, which supplies surface water to the Bethlehem Filtration Plant, was completed in 2001 by Spotts, Stevens and McCoy, Inc. for the PA DEP. The Assessment has found that the Tunkhannock Intake is potentially most susceptible to road deicing materials, accidental spills along roads and leaks in underground storage tanks. Overall, the Tunkhannock Creek Watershed has high risk of significant contamination. In the event that monitoring of either the raw or finished water identifies or detects any of these contaminants then additional required health effects information will be included in this report noting these detections and attempting to identify the potential source(s) of the contamination.

Complete reports were distributed to the City of Bethlehem's Water Bureau, local municipalities, county planning agencies and PA DEP offices. Copies of the complete report are available from the PA DEP Northeast Regional Office, Records Management Section at (570) 826-5472. A summary report of the Assessment is available on the PA DEP website at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm.

A Source Water Assessment of the Wild Creek Watershed was conducted. Copies of the final July, 2004 Report are available from the PA DEP Regional Office, Records Management Section. The final assessment found that the Wild Creek Watershed is potentially most susceptible to individual point source activities including above ground storage tanks and underground petroleum storage tanks and to non-point source activities including fuel oil storage tanks, household cleaning supplies, highway spills, highway salt applications, lawn care supplies, on-lot sewage disposal, petroleum pipelines, swimming pools, wells (abandoned or active) and bore holes (abandoned or active). Overall, because of all the potential threats identified near the water supply, the adoption of a source water protection plan was recommended. More information is available at http://www.bethlehem-pa.gov. call customer service at 1-800-638-0262 if you have questions.

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Information Concerning Lead in Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Community Utilities of Pennsylvania, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Action level goal (ALG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.
Avg	Regulatory compliance with some MCLs is based on running annual average of monthly samples.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2020.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Community Utilities of Pennsylvania, Inc. does not hold regular public meetings. If you have any questions about this report or your water utility, please contact customer service at 1-800-638-0262.

Violations

In 2020, Community Utilities of Pennsylvania, Inc. performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received **no violations** from PADEP and was in compliance with applicable testing and reporting requirements.

Water Quality Test Results - Community Utilities of Pennsylvania, Inc. Westgate

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90th percentile)	2019	0.068	None	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	2019	ND	None	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectant / Disinfection By-Product Contaminants

Contaminant (units)	Sample Date	MCL/ MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Chlorine (ppm)	2020	N	1.10	0.86 - 1.25	MRDLG = 4	MRDL = 4	Water additive used to control microbes
TTHM (ppb) [Total Trihalomethanes]	2020	N	32.0	23.2 - 41.1	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	2020	N	16.13	12.3 - 22.8	N/A	60	By-product of drinking water disinfection

PFAS Testing

Community Utilities of Pennsylvania, Inc. continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) were tested during 2020 with no detection. No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters. Nanograms per liter (ng/L) equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

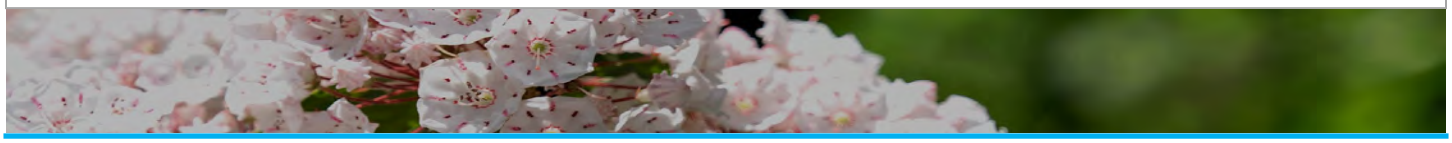
Community Utilities of Pennsylvania, Inc. is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations - Disinfectant / Disinfection By-Product

Violation Type	Violation Begin	Violation End	Violation Explanation
FAILURE TO MONITOR OR REPORT FOR THE CONTAMINANT SPECIFIED	12/31/2020	1/3/2021	*We failed to collect Haloacetic Acid and Trihalomethane samples on 01/03/2021 and therefore cannot be sure of the quality of our drinking water during that time.* Samples were taken three days too early on 12/31/2020. All results of Haloacetic Acids and Trihalomethanes collected in 2020 were below the MCL.

Visit us online at www.uiwater.com/pennsylvania to view the Water Quality Reports.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect *at* https://connect.myutility.us/connect/



2020 Water Quality Test Results - City of Bethlehem, PA

Inorganic Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2020	N	<0.50	N/A	4	4*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Iron (ppm)	2020	N	0.03	NA	NA	0.3	Naturally occurring element
Sodium (ppm)	2020	N	7.2	6.5 - 7.8	NA	NA	Naturally occurring element
Zinc (ppm)	2020	N	0.043	0.027 - 0.059	NA	5	Naturally occurring element
Sulfate (ppm)	2020	N	4	NA	NA	250	Naturally sources
Total Dissolved Solids (ppm)	2020	N	54	42 - 66	NA	500	Naturally sources, chemicals used in the water treatment process, and distribution piping.

The City of Bethlehem has been adding Fluoride to their drinking water since June 1971.
**EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.*

Turbidity

Contaminant (units)	MCL Violation Y/N	Your Water	Lowest Monthly % of samples meeting TT	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	No	0.051	100%	N/A	TT = 1 NTU	Soil runoff

Turbidity *is a measure of the cloudiness of the water. The City of Bethlehem monitors it because it is a good indicator of the effectiveness of the filtration system.*
NTU *(Nephelometric Turbidity Units) - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.*
Treatment Technique (TT) *- A required process intended to reduce the level of a contaminant in drinking water. For turbidity this means any monthly sample greater than 1 NTU or 95% of the monthly samples are greater than or equal to 0.3 NTU.*

Unregulated Contaminant Monitoring*

Contaminant (units)	Reported Level	Range	Major Sources
Manganese	2.80 ug/L	2.25 - 3.98 ug/L	Naturally occurring element
Bromochloroacetic Acid	1.48 ug/L	0.47 - 2.13 ug/L	By-product of drinking water chlorination
Bromodichloroacetic Acid	1.72 ug/L	1.21 - 3.24 ug/L	By-product of drinking water chlorination
Dichloroacetic Acid	13.34 ug/L	1.35 - 27.2 ug/L	By-product of drinking water chlorination
Monochloroacetic Acid	2.84 ug/L	ND - 2.84 ug/L	By-product of drinking water chlorination
Trichloroacetic Acid	19.22 ug/L	5.76 - 29.3 ug/L	By-product of drinking water chlorination

**Unregulated Contaminant Monitoring helps the EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.*

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
FAILURE TO MONITOR

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

Monitoring Requirements Not Met for haloacetic acids and trihalomethanes.

Our water system violated several drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. Haloacetic acid and trihalomethane samples were required to be collected on 01/03/2021. We failed to collect them on 01/03/2021 and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?

There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for this year, how often we are supposed to sample for haloacetic acids and trihalomethanes and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples were taken
HAA5	1/quarter	1	01/03/2021	12/31/2020
TTHM	1/quarter	1	01/03/2021	12/31/2020

What happened? What was done?

PA DEP requires that HAA5 and TTHM samples be taken 01/03/2021. Samples were taken three days too early on 12/31/2020.

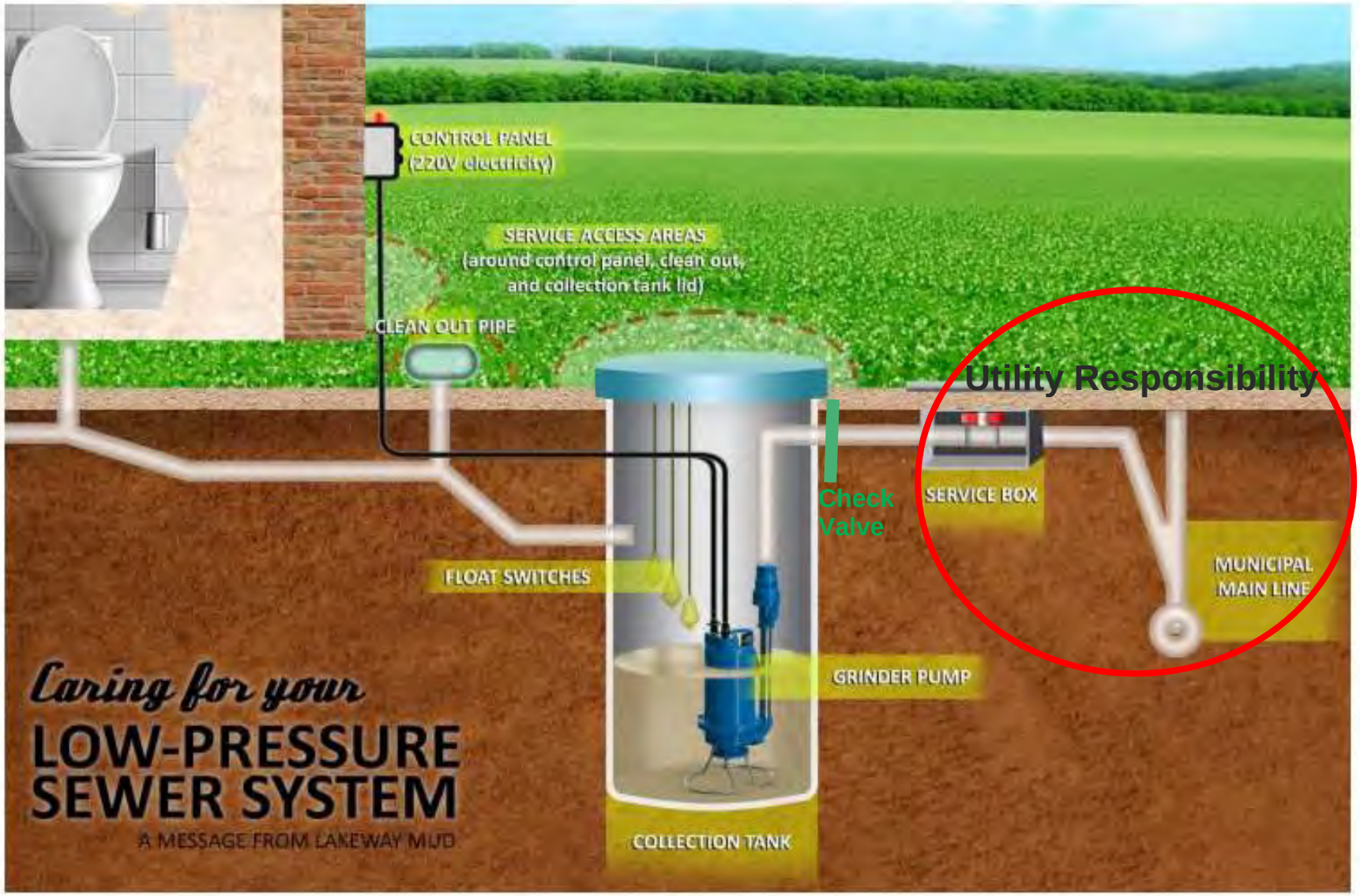
For more information, please contact Emily Long at 1-800-638-0262 or 570 Hallet Road, East Stroudsburg, PA 18301.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Community Utilities of Pennsylvania, Inc.

PWS ID#: 3480024 Date distributed: Direct Mail with Annual 2020 CCR

CUPA Exhibit No. EL-2R


CONTROL PANEL
(220V electricity)
SERVICE ACCESS AREAS
(around control panel, clean out,
and collection tank lid)
CLEAN OUT PIPE
Utility Responsibility
Check
Valve
SERVICE BOX
FLOAT SWITCHES
MUNICIPAL
MAIN LINE
GRINDER PUMP
Caring for your
LOW-PRESSURE
SEWER SYSTEM
A MESSAGE FROM LAKEWAY MUD
COLLECTION TANK

CUPA Exhibit No. EL-3R

Questions

- Who is responsible for maintaining the water/sewer pipes? Not just providing service and charging for it, but actually inspecting, cleaning, and overall maintenancing our entire infrastructure? Utilities Inc. is responsible for the lift stations and collections system. The collections system consists of force main, low pressure main, and gravity main. For low pressure main our responsibility ends at the first curb stop before the grinder pump on the sewer lateral. For gravity, our responsibility ends at the customers property line of the sewer lateral.
- How often is everything maintenanced to prevent excessive buildup and narrowing of the sewer pipes? Lift stations are pumped down and cleaned annually and as needed. Electrical equipment is serviced and inspected annually and as needed. Tamiment has very few gravity mains. Utilities Inc. cleans and televises gravity mains about every 5 years, depending on the age and condition of the system. Force and low pressure mains cannot be cleaned and televised because of the nature of their design. When a blockage occurs, it is resolved through clean-out valves located throughout the system. A blockage would cause a break in the pipe.
- When was maintenance last completed? Do we have documented records to reference and can they be provided with the water quality reports? Lift stations were serviced in 2019 after we acquired the system. Gravity mains were cleaned in 2020. Maintenance records are updated with the Public Utility Commission (PUC) periodically. These records can be acquired by the public from the PUC. Water quality is not performed on wastewater in the collections system.
- The sewer lines don't work on gravity , they work on pressure. How do they ensure they are pumping proper pressure thru their lines without spiking? This depends on the type and brand of grinder pumps the customers install. The average running pressure of a grinder pump should be 60-70 PSI with a maximum running pressure of 120 PSI. If someone in the system installs a grinder pump with a higher running PSI, this will impact the PSI in the collections system which could impact their neighbors. Home elevation and lateral distance from home to collection system also impacts average PSI of the system. It is best for everyone to use the same grinder pump to ensure average 60-70 PSI is maintained. We recommend the Eone pump through ESC.
- Why are check valves/back flow preventers failing if proper P.S.I. is flowing through their systems? Check valves/back flow preventers eventually do fail. They do not last forever. There should be a check valve after the sewer curb stop and there should also be a check valve built into the grinder pump. We recommend back flow preventers be inspected every year. This is the responsibility of the home owner.
- Even installed brand new check valves are being compromised , how can an adjustment be made to avoid destroying even brand new check valves? Make sure the check valve valve is the correct type for a low pressure sewer application. The check valve could have been faulty or debris got stuck in it causing it to fail.
- Why are grinder pumps making noise if you haven't flushed your toilets or having water running? The pump is running for some reason. Call a plumber to have them investigate. If there is something wrong and the pump continuously runs it will break. Investigate what is triggering the pump to run such as a stuck float or bad control panel.
- How is it possible for the system to fail when nobody has been home to use it for a week? Causes could be: electrical surge, overtime the pump fails due to wear and tear, bad bearing, bad winding, grit, foreign objects, other underlining issue, pump is at it's end of life, etc.

CUPA Exhibit No. EL-4R

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Well 3 2019 electrical altered by Pennsylvania Utility Company operations

Tank 3 2019 electrical mouse nest

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP 2019

WWTP 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP 2019

WWTP 2021 new railing and walkways, new electrical, new splitter box, covered clarifiers

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP 2019

WWTP 2021

new electrical, new air blower

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

MCP Panel covered in bird fecal matter 2019

New Electrical 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

WWTP & MCP panel shows historical flooding 2019

WWTP 2021 new drainage in front of door and retaining wall to prevent water from entering the WWTP building

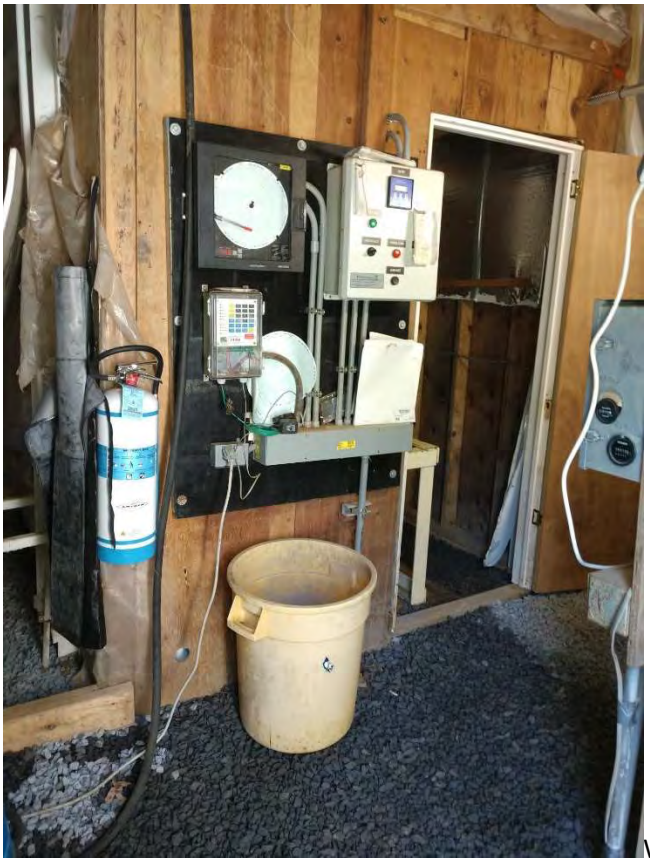
Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Lakeside Lift Station September 2019

Well 2 2019

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Well 1 treatment 2019


Well 1 treatment 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Failed clarifier 2019

Fixed 2021

Community Utilities of Pennsylvania, Inc. – Tamiment
Before and After

Contractor emptying the warehouse 2019

Warehouse 2021 decluttered, new gravel, dead, trees removed, gutters fixed

CUPA STATEMENT NO. 8-R

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REBUTTAL TESTIMONY

OF

LAQUISHA M. PARKS

WATER & WASTEWATER DIVISION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is LaQuisha M. Parks and my business address is 4944 Parkway Plaza Boulevard, Charlotte, NC 28217.

Q. WHERE ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am Vice President of Customer Experience, US Operations for Corix Group of Companies ("Corix"), a position I have held since joining Corix in September 2020.

Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. I hold a Bachelor of Science degree in Engineering from North Carolina Agricultural and Technical State University and a Master of Science in Business from Pfeiffer University. I have over 18 years engineering, customer service and executive management experience, most of which was in the electric and gas industries, in various capacities. My positions have included Director of Duke Energy Corporation's Consumer Affairs department, Regional General Manager of Duke Energy Corporation's Customer Care Operations department, and General Manager of the Customer Operations department for Piedmont Natural Gas. I began my career in 1995 as an engineer for the United States Department of Energy, conducting energy audits for military facilities and naval ships.

Q. WHAT ARE YOUR DUTIES AS VICE PRESIDENT OF CUSTOMER EXPERIENCE OPERATIONS WITH CORIX?

A. I have overall responsibility for implementing cultural processes aligned with Corix's "customer intimacy" strategy for regulated utility operations. I am responsible for three contact centers in the states of North Carolina, Florida and

Illinois. I oversee all aspects of our Customer Experience Operations Department, from policy formation and implementation, performance standards, strategic objectives, to financial performance.

Q. DO YOUR DUTIES AS VICE PRESIDENT OF CUSTOMER EXPERIENCE EXTEND TO COMMUNITY UTILITIES OF PENNSYLVANIA, INCORPORATED ("CUPA")?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony responds to various statements about the quality of CUPA's customer service raised at the public input hearing. N.T. 74-76, 137-138, 191. My testimony also responds to Office of Consumer Advocate Witness Sherwood's suggestions that "CUPA should make changes to ensure that customers can easily reach the Company and get answers to their questions by phone." OCA St. No. 1 at 6. My testimony provides an overview of process and organizational changes recently implemented by Customer Experience Operations in order to improve service to our customers. The Customer Experience Operations Department was restructured in October 2020 in furtherance of Corix's strategic vision. The goal of the Customer Experience Operations Department is to enhance relationships with internal and external customers while delivering on Corix's overall strategy of increased customer service through ongoing and continuous improvement to customer care. The Customer Experience Operations team has worked to achieve this goal by clearly establishing the vision and mission of how Corix delivers excellent customer service, and by aligning certain internal operations of Corix to

incentivize improved service to customers of our utilities, such as CUPA. My testimony applies to both water and wastewater customer service.

Q. CAN YOU PLEASE SUMMARIZE THE VISION AND MISSION OF CUSTOMER EXPERIENCE OPERATIONS?

A. The vision of Customer Experience Operations is “CARE”: customer focused and caring; agile and accountable; respectful and responsive; and ease with which to do business. The Customer Experience Operation’s mission is “EASE”: effective the first time; appreciate the customer each time; safety all the time, and easy to do business with every time.

Q. HOW HAVE YOU WORKED TO ADVANCE THE VISION AND MISSION OF CORIX?

A. First, the Customer Experience Operations Team worked with the Corix corporate group to develop the vision and mission, and then announced it to the internal workforce. The purpose of this was to make clear the customer service expectations and align the organization and its customer service operations to meet the vision and mission. Relatedly, we formally rebranded the department as the Customer Experience Operations Team. We also aligned the responsibility of division of labor within the group and hired three new staff members in the Customer Experience Operations Team. Corix also created a new pay structure to reward more experienced employees. Culturally, we implemented an attendance merit program. This is a new system of accountability for our department which rewards employees for consistent attendance and great performance. The

purpose of this program is to drive positive behaviors, increase employee retention, and help build excellence in performance.

Q. WHAT OPERATIONAL CHANGES HAS THE CUSTOMER EXPERIENCE OPERATIONS TEAM MADE TO BETTER SERVE CUPA'S CUSTOMERS?

A. Operationally, we developed a regionalized support model to offer more localized customer expertise and support. Prior to this change, if a CUPA customer called seeking support, it was possible that the customer would be directed to a Corix customer support representative located in any given Corix location. In contrast, now a CUPA customer will be directed to a customer service representative responsible for customers in PA. We believe this change is a better model and provides improved customer service support for the current and future needs of our customers. A closer connection to the communities we serve will enable us to provide more informed and better care.

Q. HOW DOES THE CUSTOMER EXPERIENCE OPERATION TEAM ENSURE THE COMPANY'S STATED VISION AND MISSION ARE BEING MET?

A. Beginning in 2019, we implemented a process to obtain increased customer feedback by means of a survey. Specifically, at the conclusion of every call from a customer, the customer is prompted to complete a three-question Customer Satisfaction Survey ("CSS"). The CSS questions solicit feedback on the overall customer service provided to the customer, inquire as to whether the issue was resolved, and ask whether the customer was satisfied that the Company provided the effort and had the skills necessary to resolve the issue. The customer's responses to the CSS are used to develop an overall score which is evaluated by

the Customer Experience Operations Team. These scores and customer feedback are then used in coaching and training.

Q. PLEASE EXPOUND ON THE COACHING AND TRAINING MODEL YOU JUST MENTIONED.

A. We keep and evaluate the CSS responses and the metrics that are developed. Anything below a score of 90 triggers an evaluation of the call. To that end, the Customer Experience Operations Team listens to the call then engages in training with the employee and their supervisor. The purpose of this is to build and maintain high levels of service. We always follow up with a customer if a complaint is lodged, or a score is less than satisfactory, to seek a proactive resolution of the customer's issue. In addition, we implemented a new coaching model in December 2020 to ensure our Customer Experience Specialists ("CES") receive timely feedback on call quality and customer interactions that are not related to the survey. The model is a platform of a two-way communication, where the Supervisor and the Customer Experience Specialists listen to 2-3 calls/month and discuss opportunities for improvement and successes during the call. The calls are graded based on how well the CES handled the call. A score of 90 or above is the target. The coaching model ensures that each CES is knowledgeable about what they are trained to do and able to demonstrate that aptitude. The model is used to work on personal improvement on a one-on-one basis. We recently hired a full-time trainer to develop, plan, schedule, facilitate and lead internal "on-going" training programs across Customer Experience to develop our employees, ensure consistency, retain organizational knowledge, and develop soft skills. Through the

establishment of a training program, by fostering an environment that values continuous education and providing employees with the training resources needed for success, the Training Coordinator will reinforce our overall customer service strategy.

Q. HAS CUSTOMER SATISFACTION IMPROVED AS A RESULT OF THESE INITIATIVES?

A. Yes, and the data reflects that the Company's customer service efforts continue to be successful. The Company maintains overall metrics on the results of the CSS. As I mentioned, the target score on each question is 90, and as of mid-July 2021, the Company's overall score on each question met or surpassed the target number of 90. Additionally, each question of the CSS has either improved or maintained its score over the course of 2021. I would add that the percentage of calls answered within sixty seconds has increased over the course of 2021, and the abandonment rate of calls has decreased as noted in Parks Rebuttal Exhibit No. 1. All of these data points reflect positive customer service efforts by the Company.

Q. WHAT CUSTOMER EDUCATION AND OUTREACH EFFORTS HAS THE COMPANY MADE WITH ITS STAKEHOLDERS AND CUSTOMERS WITH REGARD TO THE COVID-19 EMERGENCY?

A. The Company took numerous actions to address the Covid-19 pandemic. Beginning in the spring of 2020, the Company sent weekly updates to our stakeholders. The Company complied with all orders from the Commission regarding COVID, including those related to suspension of disconnections, prohibition on utility shut-offs, late fees, reconnection fees, and related Executive

Orders. Similarly, the Company issued numerous press releases, social media posts, website posts and notices related to these same topics.

Q. DOES THE COMPANY PLAN TO MAKE ANY OUTREACH WITH RESPECT TO THE LOW-INCOME HOUSEHOLD WATER ASSISTANCE PROGRAM ("LIWHAP")?

A. Yes. It is my understanding that funds have been allocated to the state of Pennsylvania based on recent federal legislative action. At this point, it remains unclear as to how the LIWHAP program will work and how these state funds will be allocated, specifically. As such, we plan to contact the Department of Human Services/Bureau of Policy, Division of Federal Programs and Program Management to ensure our customers have the best possible access to these funds.

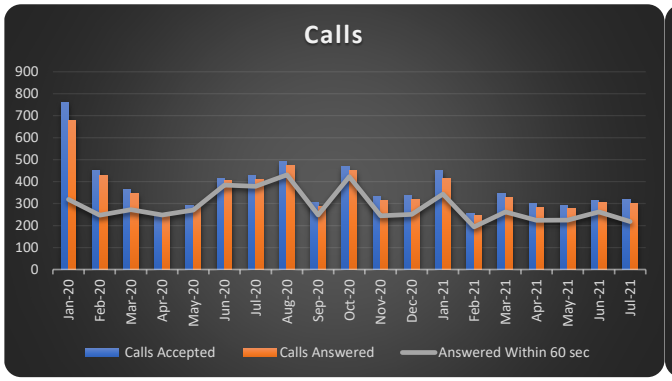
Q. DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL TESTIMONY?

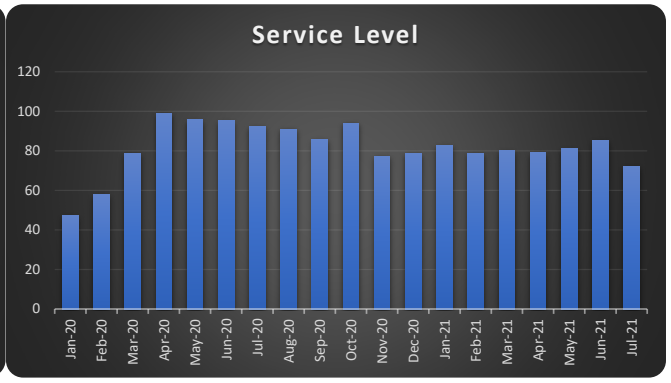
A. Yes, it does. However, I reserve the right to update or amend this testimony upon receipt of additional relevant data or other information that may become available.

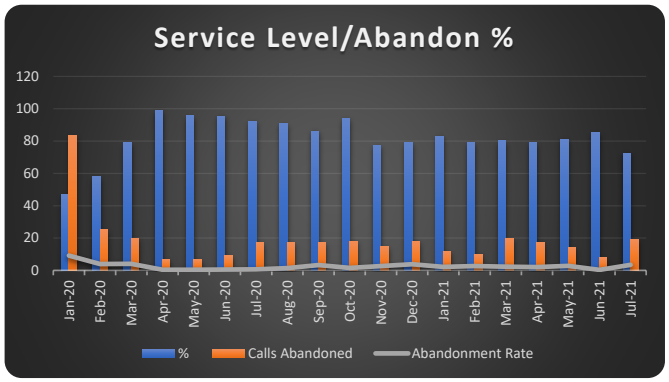
Parks Rebuttal Exhibit 1

Parks Rebuttal Exhibit 1

	Calls Accepted	Calls Answered	Answered Within 60 sec		%	Calls Abandoned	Abandonment Rate
Jan-20	763	678	319	Jan-20	47.05	84	9.17
Feb-20	452	427	247	Feb-20	57.85	25	3.98
Mar-20	365	345	272	Mar-20	78.84	20	4.11
Apr-20	257	250	248	Apr-20	99.2	7	0.39
May-20	290	283	271	May-20	95.76	7	0.34
Jun-20	412	403	384	Jun-20	95.29	9	0.49
Jul-20	426	409	379	Jul-20	92.67	17	0.7
Aug-20	490	473	431	Aug-20	91.12	17	1.43
Sep-20	305	288	248	Sep-20	86.11	17	3.28
Oct-20	467	449	423	Oct-20	94.21	18	1.5
Nov-20	331	316	244	Nov-20	77.22	15	2.72
Dec-20	336	318	251	Dec-20	78.93	18	3.87
Jan-21	450	414	343	Jan-21	82.85	12	2.22
Feb-21	256	246	194	Feb-21	78.86	10	2.73
Mar-21	347	327	262	Mar-21	80.12	20	2.31
Apr-21	301	283	224	Apr-21	79.15	17	1.99
May-21	291	277	225	May-21	81.23	14	2.75
Jun-21	314	306	262	Jun-21	85.62	8	0.32
Jul-21	320	301	218	Jul-21	72.43	19	3.44







CUPA W STATEMENT NO. 9-R
August 27, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NOS. R-2021-3025206 AND R-2021-3025207

REBUTTAL TESTIMONY

OF

STEVEN M. LUBERTOZZI

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I. INTRODUCTION, PURPOSE, AND SUMMARY

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is Steven M. Lubertozzi. I am the Senior Vice President, North Region for Corix Regulated Utilities U.S., Inc. ("CRUUS ") and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of CRUUS. My business address is 500 W, Monroe Ste 3600, Chicago, IL 60661.

Q. PLEASE DESCRIBE YOUR DUTIES IN YOUR CURRENT POSITION.

A. As Senior Vice President, I am responsible for all aspects of the Company's business, culminating in the ongoing provision of safe drinking water and environmentally responsible wastewater service to all our customers.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I graduated from Indiana University in 1990, and I am a Certified Public Accountant. I earned my Masters of Business Administration from Northwestern University's Kellogg School of Management. I am a member of the American Institute of Certified Public Accountants, and I have been employed by Utilities, Inc. (now Corix Regulated Utilities (US) Inc.), the parent of USI, since June of 2001. I am a past Board Member of the National Association of Water Companies, I am a current Board Member of the Illinois Chapter of the National Association of Water Companies, and I am a current Board Member of the Financial Research Institute.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY OTHER PUBLIC UTILITY COMMISSION?

A. Yes. I have provided written testimony before public utilities commissions throughout the United States, including the Pennsylvania Utility Commission ("Commission"), on topics

ranging from cost of equity, capital structure, cost of debt, acquisition adjustments, divestment strategies, appropriate levels of operations and maintenance expense, parent company allocations, affiliate transactions, income taxes and most every aspect of utility operations. The other state commissions where I have presented testimony include Florida, Illinois, Indiana, Kentucky, Maryland, Nevada, New Jersey, New Mexico, North Carolina and South Carolina.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony will further address the Tamiment rate base determination and the Return on Equity recommendation. I am addressing both the water and wastewater divisions in this testimony.

II. <u>TAMIMENT RATE BASE</u>

Q. DID CUPA PREVIOUSLY PROVIDE TESTIMONY REGARDING TAMIMENT RATE BASE VALUATION?

A. Yes. Mr. Perry Brown's Direct Testimonies, CUPA W Statement No. 2 at 16-17; CUPA WW Statement No. 2 at 10-11. He provided the rate base value for both water and wastewater that the prior owner of the Tamiment utility, Pennsylvania Utility Company, Inc., (Pennsylvania Utility Company) provided and raised that the Commission has ordered the rate base for Tamiment be established in this proceeding. CUPA included the book value of the assets and associated depreciation based on a fixed asset schedule provided by Pennsylvania Utility Company at the time the acquisition was recorded.

Q. WHAT WERE THE VALUATIONS THE PRIOR OWNER PROVIDED?

A. For water: rate base value of $1,324,261, including plant balance of $2,212,733 and accumulated depreciation balance of $888,472 at the time of the acquisition.

For wastewater: rate base value of $1,683,056, including plant balance of $2,861,017, accumulated depreciation balance of $1,617,881, and a construction work in progress ("CWIP") balance of $439,920 at the time of the acquisition.

Mr. Brown provided a detailed breakdown of these values in CUPA W Exhibit PAB-2 and CUPA WW Exhibit PAB-2. This information is also provided below in a table summary format:

Description	UPIS	Accumulated Depreciation	CWIP	Total
Water	2,212,733	(888,472)	-	1,324,261
Wastewater	2,861,017	(1,617,881)	439,920	1,683,056
Total	**5,073,750**	**(2,506,354)**	**439,920**	**3,007,317**

Q. DOES CUPA AGREE THAT THE COMMISSION SHOULD DETERMINE THE RATE BASE FOR TAMIMENT TO BE THE VALUES REFLECTED ABOVE?

A. For water, yes. CUPA believes the $1,324,261 is an accurate reflection of the Tamiment rate base as of the time of purchase. However, for wastewater CUPA believes the CWIP balance of $439,920 should not be included in rate base, putting rate base determination at $1,243,135.

Q. WHY DOES CUPA BELIEVE THE CWIP BALANCE SHOULD NOT BE INCLUDED IN RATE BASE FOR WASTEWATER?

A. The CWIP balance of $439,920 is currently not in progress, will not be in progress during the future test period and will not be in service shortly after the future test period.[1] However, CUPA believes that these costs were prudently incurred by the prior owner and these costs are related to engineering studies and permitting work for potential upgrades to the wastewater

[1] *Pa. PUC v. City of Bethlehem – Water Department*, Docket Nos. R-2020-3020256 *et al.* 2021 WL 1534307 Opinion and Order at *26 (Order entered Apr. 15, 2021) ("as the ALJ found, the Commission may allow claimed expenditures to undertake construction for plant that will not be completed, i.e., used and useful at the end of the FYT, in rate base. However, in those circumstances, construction of the specific project has been required to be "in progress" (construction work in progress) during the FTY, and "in service" shortly thereafter.").

facilities. Because CUPA believes the prior owner prudently incurred these costs to assess and perform due diligence to evaluate what projects should be considered. There are no projects currently in progress, no projects will be in progress during the future test period, and no projects will be in service shortly after the future test period, and therefore, CUPA instead proposes to amortize this balance over 11 years.

Q. WHAT IS CUPA'S FINAL RATE BASE RECOMMENDATION THAT IS REQUIRED PURSUANT TO DOCKET NOS. A-2018-3005430 AND A-2018-3005432 AFTER YOU ADJUST FOR THE CWIP PREVIOUSLY DISCUSSED?

A. CUPA final rate base recommendation is as follows:

Description	UPIS	Accumulated Depreciation	CWIP	Rate Base
Water	2,212,733	(888,472)	-	1,324,261
Wastewater	2,861,017	(1,617,881)	-	1,243,135
Total	**5,073,750**	**(2,506,354)**	**-**	**2,567,397**

Q. HOW DOES CUPA PROPOSE TO AMORTIZE THIS BALANCE?

A. CUPA has reflected this amortization in CUPA WW Statement No. 3-R (Page3).

Q. IF THIS BALANCE IS AMORTIZED, WILL CUPA SEEK TO RECOVER THIS MONEY BACK FROM THE SELLER?

A. No.

III. RETURN ON EQUITY

Q. Do you have any comments related to the Return on Equity recommendation of 0%?

A. Yes, the capital markets would have a negative reaction, and, in my opinion, would be hesitant to invest in Pennsylvania. Capital goes where it is welcome and stays where it is well treated. Investors will decline to invest in similarly situated assets, if there is significant risk of

having their capital confiscated. The capital market would view this as a taking. I have been to lender presentations and discussed equity infusions with investors, so I know what my advice would be to lenders and investors – deploy your capital outside the Commonwealth of Pennsylvania, if the 0% Return on Equity was approved. Again, in my opinion this would be considered a taking and confiscation of an investor's capital, and regardless of whether it is legal or not, that would send shockwaves through the investment and utility community and potentially discourage infrastructure investment in the Commonwealth of Pennsylvania.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

OCA STATEMENT 3R

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket Nos. R-2021-3025206
	)	R-2021-3125207
Community Utilities of Pennsylvania, Inc.	)	

REBUTTAL TESTIMONY
OF
JEROME D. MIERZWA

ON BEHALF OF
THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 27, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN THIS PROCEEDING?

A. Yes. My direct testimony was submitted as OCA Statement 3 on August 13, 2021. My direct testimony addressed the water and wastewater cost of service ("COS") studies and rate design proposals presented by Community Utilities of Pennsylvania, Inc. ("CUPA" or "Company").

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to the water and wastewater service rate design recommendations presented by Esyan A. Sakaya on behalf of the Bureau of Investigation and Enforcement ("I&E") and Brian Kalcic on behalf of the Office of Small Business Advocate ("OSBA").

II. WATER RATE DESIGN

Witness: Esyan A. Sakaya

Q. PLEASE SUMMARIZE THE WATER SERVICE RATE DESIGN PROPOSALS PRESENTED BY MR. SAKAYA.

A. Mr. Sakaya claims that the Westgate Public Fire Protection charge, the Tamiment 6-inch customer charge, and the Tamiment availability charge proposed by CUPA are

too high, and recommends that these charges be reduced. He also recommends that the proposed low-income usage rate not be implemented.

Q. WHAT IS MR. SAKAYA'S PROPOSAL CONCERNING THE WESTGATE PUBLIC FIRE PROTECTION CHARGE?

A. Mr. Sakaya finds CUPA's proposal to increase the rate from $32.18 per month to $118.73 per month, or 269 percent, to be inconsistent with the concept of gradualism. Mr. Sakaya recommends that the Public Fire Protection rate be increased to $44.00, or by 36.7 percent, which is the overall system average increase proposed by the Company.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S PUBLIC FIRE PROTECTION RATE PROPOSAL?

A. As indicated in my direct testimony, to be consistent with Section 1328 of the Public Utility Code, the Company will be revising its proposed rates in rebuttal testimony to limit the increase to Public Fire Protection to 25 percent of the cost of service.[1] This may further limit the increase to Public Fire Protection rates. While there is no hard and fast rule, generally, a limit of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. Therefore, subject to the limitations of Section 1328, I recommend that Public Fire Protection rates be increased by 1.5 times the system average increase authorized by the Commission in this proceeding.

Q. WHAT IS MR. SAKAYA'S PROPOSAL CONCERNING THE TAMIMENT 6-INCH CUSTOMER CHARGE?

[1] CUPA response to OSBA Interrogatory Set 1, No. 2.

A. Mr. Sakaya finds CUPA's proposal to increase the charge from $121.25 per month to $873.09 per month, or 620 percent, to be inconsistent with the concept of gradualism. Mr. Sakaya recommends that the 6-inch customer charge be increased to $166.00, or 36.9 percent, which is also consistent with the system average increase proposed by the Company.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S 6-INCH CUSTOMER CHARGE PROPOSAL?

A. In my direct testimony, I recommended that all customer charges be maintained because the present charges already exceeded the cost-based rates identified on page 16 of CUPA Exhibit SAM-1. Upon further review of Exhibit SAM-1, I note that the 6-inch customer charge is actually less than the cost of service rate of $370.45. Therefore, I do not oppose Mr. Sakaya's recommendation.

Q. WHAT IS MR. SAKAYA'S PROPOSAL CONCERNING THE TAMIMENT AVAILABILITY CHARGE?

A. Mr. Sakaya finds CUPA's proposal to increase the current availability charge of $19.14 per quarter to $15.32 per month, or 142 percent, to be inconsistent with the concept of gradualism. Mr. Sakaya is proposing a Tamiment availability charge of $8.70 per month, or 37.4 percent, which is comparable to the system average increase proposed by the Company.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S TAMIMENT AVAILABILITY CHARGE PROPOSAL?

A. CUPA is proposing to decrease the Consolidated service territory availability charge. As noted in my direct testimony, I do not believe a rate decrease is appropriate when overall rates are increasing. Therefore, I recommended that the Consolidated service

territory availability charge be maintained. As noted by Mr. Sakaya, CUPA is proposing an increase in the Tamiment service territory availability charge of 142 percent. To provide for gradualism and to move toward eventual consolidation of availability charges, an increase of 1.5 times the system average increase in the Tamiment service territory availability charge would be reasonable. The additional revenue from not reducing the availability charge in the Consolidated service territory will help to offset the reduced increase to the Tamiment availability charge.

Q. WHY DOES MR. SAKAYA DISAGREE WITH THE COMPANY'S PROPOSAL TO IMPLEMENT A LOW-INCOME USAGE RATE?

A. Mr. Sakaya recommends that CUPA's proposed low-income usage charge not be implemented because it would increase the usage charge for other customers. He also believes that the usage charge discount is too large.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S RECOMMENDATION THAT THE LOW-INCOME USAGE CHARGE NOT BE IMPLEMENTED?

A. Bill affordability is a significant concern, particularly given the magnitude of CUPA's proposed increases to water and wastewater bills and the timing, during an ongoing pandemic. This concern is raised in the direct testimony of OCA witness Sherwood, CUPA witness Dickson, OSBA witness Kalcic and I&E witness Keller.[2] The proposed low-income rate usage rate would help to make bills more affordable and mitigate the impact of the increase. As Mr. Sakaya noted, other water utilities have a customer assistance program in place. In response to Mr. Sakaya's concern that the discount is too large, I repeat the recommendation in my direct testimony that the program should

[2] OCA Statement 1 at 4-7; CUPA Statement 3W at 5-8; OSBA Statement 4-5. I&E witness Keller also recognized that "Virtually every customer testified about the affordability of the rate increase, especially when combined with the impact of COVID-19." I&E Statement 2 at 20.

be approved on a pilot basis so that it can be evaluated and changed in the next base rate case as appropriate, after some experience.

III. WATER RATE DESIGN

Witness: Brian Kalcic

Q. WHAT IS MR. KALCIC'S CONCERN WITH CUPA'S PROPOSED INCREASES TO THE FIXED MONTHLY CHARGES AND CONSUMPTION CHARGES?

A. In this proceeding, CUPA is proposing to increase fixed charge revenues (i.e., monthly customer charges and availability charges) by a greater percentage than consumption charge revenues. Mr. Kalcic claims that this is unreasonable because the Company's proposal is not cost-based.

Q. WHAT DOES MR. KALCIC RECOMMEND?

A. Mr. Kalcic recommends that the Commission direct CUPA to assign a uniform percentage increase to (i) fixed monthly customer charges and availability charges; and (ii) overall consumption charge revenues.

Q. DO YOU AGREE WITH MR. KALCIC'S RECOMMENDATION?

A. No. As explained in my direct testimony and in responding to Mr. Sakaya, above, CUPA's fixed monthly customer charges should not be increased because the current charges already exceed the indicated cost of service charges. Availability charges should be increased as recommended in my direct testimony and for the reasons I presented in responding to Mr. Sakaya's availability charge proposal.

Q. IS MR. KALCIC IN AGREEMENT WITH THE COMPANY'S PROPOSAL TO CONSOLIDATE ITS TAMIMENT AND CONSOLIDATED SERVICE TERRITORY RATES AT THE CONCLUSION OF THIS PROCEEDING?

A. No. At the Company's requested revenue increase, Tamiment customers would experience a rate increase of 80 percent if rates were consolidated. In order to mitigate the rate impacts on Tamiment system customers in this proceeding, Mr. Kalcic recommends that the Commission direct CUPA to (i) consolidate (only) the customer charges and availability charges paid by customers in the Tamiment and Consolidated rate areas; and (ii) eliminate one-half of the existing difference in consumption charges of $4.15 per thousand gallons across the two rate areas. He recommends that further consolidation of Tamiment system rates should be addressed in CUPA's next rate case.

Q. WHAT IS YOUR RESPONSE TO MR. KALCIC'S RATE CONSOLIDATION PROPOSAL?

A. First, it is not clear that Mr. Kalcic's rate consolidation proposal can be adopted in conjunction with his proposal to assign a uniform percentage increase to (i) fixed monthly customer charges and availability charges; and (ii) overall consumption charge revenues. Second, adopting Mr. Kalcic's proposal would result in an increase in fixed monthly customer charges. As just explained, fixed monthly customer charges should not be increased because the current charges already exceed the indicated cost of service charges. Third, with respect to the consolidation of availability charges, as noted in responding to Mr. Sakaya, consolidation would likely require a decrease in the Consolidated service territory charge and a significant increase in the Tamiment availability charge which is inconsistent with the concept of gradualism. Individual rates should not be decreased when overall rates are increasing. Finally, on a stand-alone basis, Mr. Kalcic's proposal to eliminate one-half of the existing difference in consumption charges in this proceeding and address further consolidation in CUPA's next proceeding is not unreasonable.

IV. WASTEWATER RATE DESIGN

Witness: Esyan A. Sakaya

Q. DID MR. SAKAYA FIND ANY CONCERNS WITH THE COMPANY'S WASTEWATER SERVICE RATE DESIGN PROPOSALS?

A. Yes. CUPA has proposed to increase the availability charge for Tamiment customers from $22.90 per quarter, which is equivalent to $7.63 per month, to $22.91 per month, or by 200 percent. Mr. Sakaya found this proposal to be inconsistent the concept of gradualism. Mr. Sakaya recommends that the availability charge for both the Consolidated and Tamiment service territories be set at $11.00 per month.

Q. WHAT IS YOUR RESPONSE TO MR. SAKAYA'S AVAILABILITY CHARGE PROPOSAL?

A. Under Mr. Sakaya's proposal, the availability rate for the Consolidated service territory would decrease from $13.12 to $11.00 per month. As explained earlier in my testimony concerning Mr. Sakaya's Tamiment water service availability charge proposal, I do not believe it appropriate to decrease rates when overall rates are increasing. With respect to the Tamiment wastewater availability charge, I continue to recommend that the charge be moved halfway toward the consolidated charge approved by the Commission in this proceeding.

V. WASTEWATER RATE DESIGN

Witness: Brian Kalcic

Q. DOES MR. KALCIC FAVOR THE CONSOLIDATION OF TAMIMENT AND CONSOLIDATED SERVICE TERRITORY RATES IN THIS PROCEEDING?

A. No. Mr. Kalcic finds that wastewater rate consolidation would favor Tamiment system customers since Tamiment wastewater rates are generally higher than CUPA's

Consolidated service territory rates. In order to mitigate the rate impacts on Consolidated system customers and to be consistent with his recommendation with respect to *not* fully consolidating water rates, Mr. Kalcic recommends that CUPA target its Tamiment system customers with an overall increase of approximately 0.75 times the system average increase. Mr. Kalcic recommends that further consolidation of Tamiment system wastewater rates should be addressed in CUPA's next rate case.

Q. WHAT IS YOUR RESPONSE TO MR. KALCIC'S PROPOSAL TO DELAY CONSOLIDATION OF WASTEWATER SERVICE RATES?

A. Mr. Kalcic's recommendation is in response to CUPA's proposal to consolidate rates by converting Tamiment customers from the current system of a fixed charge and a volumetric charge usage charge to only a fixed charge (flat rates). In my direct testimony, I recommended that the current system of fixed and usage charges be maintained for the Tamiment service territory and that in CUPA's next rate case, customers in the Consolidated service territory which are only assessed a flat rate be converted to a system of fixed and usage charges. Provided this recommendation is adopted, Mr. Kalcic's proposal is not unreasonable.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts set forth in my Rebuttal Testimony, OCA Statement 3R, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 27, 2021
*316423

Signature: Jerome D. Mierzwa

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

I&E Statement No. 1-SR
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WASTEWATER DIVISION

Docket No. R-2021-3025207

Surrebuttal Testimony

of

Zachari Walker

Bureau of Investigation & Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

CASH WORKING CAPITAL

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Zachari Walker, and my business address is Pennsylvania Public Utility Commission, 400 North Street, Harrisburg, PA 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

Q. ARE YOU THE SAME ZACHARI WALKER WHO SUBMITTED I&E STATEMENT NO. 1 AND I&E EXHIBIT NO. 1?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of Community Utilities of Pennsylvania, inc. Wastewater Division (CUPA WW or Company) witnesses Perry Brown (CUPA WW Statement No. 2-R) and David Clark (CUPA WW Statement No. 3-R).

Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN ACCOMPANYING EXHIBIT?

A. Yes. I&E Exhibit No. 1-SR accompanies this surrebuttal testimony. Additionally, I refer to my direct testimony and its accompanying exhibit in this surrebuttal testimony (I&E Statement No. 1 and I&E Exhibit No. 1).

<u>OPERATING AND MAINTENANCE EXPENSE ADJUSTMENTS</u>

Q. PLEASE SUMMARIZE THE COMPANY'S UPDATED REQUESTED REVENUE INCREASE.

A. The Company updated its requested gross operating revenue increase of $991,439[1] to $994,453[2] for the Fully Projected Future Test Year (FPFTY) ending December 31, 2022, in rebuttal testimony.

Q. PLEASE SUMMARIZE YOUR ADJUSTMENTS AS CONTAINED IN THIS SURREBUTTAL TESTIMONY.

A. The following table summarizes my recommended adjustments to the Company's updated position:

[1] CUPA WW Exhibit DMC-1, Section 1, p. 11.
[2] CUPA WW Exhibit DMC-1R, Section 1, p. 11.

	Company Claim	I&E Recommended Allowance	I&E Adjustment
O&M Expenses:			
Employee Pensions and Benefits	$132,498	$93,682	($38,816)
Chemical Expense	$129,205	$72,658	($56,547)
Materials, Supplies, and Other Maintenance Expense	$134,556	$101,756	($32,800)
Rate Case Expense	$46,695	$35,021	($11,674)
Total O&M Adjustments			**($139,837)**
Rate Base:			
Cash Working Capital	$231,205	$213,725	($17,480)
Total Rate Base Adjustments			**($17,480)**

SUMMARY OF I&E OVERALL UPDATED POSITION

Q. WHAT IS I&E'S TOTAL UPDATED RECOMMENDED REVENUE REQUIREMENT?

A. I&E's total updated recommended revenue requirement is $3,377,284. This recommended revenue requirement represents an increase of $701,845 to the Company's claimed present rate revenues of $2,675,439.[3] This total recommended allowance incorporates my adjustments made in this testimony to operating and maintenance (O&M) expenses and rate base, and those recommended adjustments made in the testimony of I&E witnesses Christopher Keller (I&E Statement No. 2) and Esyan Sakaya (I&E Statement No. 3).

[3] CUPA WW Exhibit DMC-1R, Section 1, p. 11.

An updated calculation of the I&E recommended revenue requirement is shown below:

Community Utilities of PA Inc. - Wastewater		TABLE I			
R-2021-3025207		INCOME	SUMMARY		
	12/31/22	INVESTIGATION & ENFORCEMENT			
	Proforma	[----------			----------]
	Present Rates	Adjustments	Present Rates	Allowances	Proposed
	$	$	$	$	$
Operating Revenue	2,675,439	0	2,675,439	701,845	3,377,284
Deductions:					
O&M Expenses	1,864,670	-139,837	1,724,833	5,123	1,729,956
Depreciation	519,721	-11,380	508,341		508,341
Taxes, Other	38,445	0	38,445	4,632	43,077
Income Taxes:					
Current State	-8,756	16,409	7,653	69,140	76,793
Current Federal	-16,567	31,048	14,481	130,820	145,301
Deferred Taxes	0	0	0		0
ITC	0	0	0		0
Total Deductions	2,397,513	-103,760	2,293,753	209,715	2,503,468
Income Available	277,926	103,760	381,686	492,130	873,816
Rate Base	12,867,313	-472,759	12,394,554	0	12,394,554
Rate of Return	2.16%		3.08%		7.05%

EMPLOYEE PENSIONS AND BENEFITS

Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY FOR EMPLOYEE PENSIONS AND BENEFITS.

A. I recommended an allowance of $93,682 or a reduction of $38,916 ($132,598 - $93,682) to the Company's FPFTY claim. This recommendation was based on the

historic decline in employee pensions and benefits as a percent of total salaries and wages.[4]

Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?

A. Yes. CUPA witness Perry Brown disagrees with my recommendation.

Q. PLEASE SUMMARIZE MR. BROWN'S RESPONSE.

A. Mr. Brown opines my approach to determine a going forward level of expense ignores the spirit of a fully projected future test year.[5] He states the employee pensions and benefits claim contains two components, retirement benefits and healthcare benefits.[6] According to Mr. Brown, retirement benefits are based on a percentage of each employee's salary while healthcare benefits are based on projected costs per employee.[7] Along with Mr. Brown's response, he includes a table displaying retirement costs at the Company, MidAtlantic, and Midwest/MidAtlantic Region levels of allocation and an exhibit displaying information pertaining to the Company's employee pension and benefits.[8]

---

4 I&E Statement No. 1, pp. 5-6.
5 CUPA WW Statement No. 2-R, p. 3.
6 CUPA WW Statement No. 2-R, p. 3.
7 CUPA WW Statement No. 2-R, p. 3.
8 CUPA WW Statement No. 2-R, pp. 3-4 and CUPA W & WW Exhibit No. PB-2R and PB-3R – CONFIDENTIAL.

Q. WHAT IS YOUR RESPONSE TO MR. BROWN'S REBUTTAL TESTIMONY CONCERNING EMPLOYEE PENSIONS AND BENEFITS?

A. While my adjustment did initially rely on historical data to forecast an appropriate level for future employee pension and benefit costs, I also relied on CUPA's forecasted level of salaries and wages. Mr. Brown does not include a breakdown of each portion of employee pensions and benefits, specifically retirement benefits and healthcare benefits. Furthermore, the employee guide does not provide an outline of the healthcare benefit costs incurred by the Company. Likewise, a table containing levels of cost allocation without outlining the calculation allocation does not provide retirement costs incurred by the Company. Additionally, "CUPA W & WW Exhibit No. PB-2R" does not aid in determining costs incurred by the Company relating to employee pension and benefits expense in a comprehensible way.

Q. DID ANY COMPANY WITNESS UPDATE THE CUPA WASTEWATER CLAIM IN REBUTTAL TESTIMONY?

A. Yes. CUPA witness David Clark indicates a $100 reduction to employee pensions and benefits for CUPA WW without any specific explanation adjusting the Company's original claim of $132,598 to $132,498 in rebuttal testimony.[9]

[9] CUPA WW Statement No. 3-R, p. 3.

1 **Q. DO YOU AGREE WITH THE COMPANY'S UPDATED CLAIM?**

2 A. No.

3

4 **Q. WHAT DO YOU RECOMMEND FOR EMPLOYEE PENSIONS AND**

5 **BENEFITS?**

6 A. I continue to recommend an allowance of $93,682. However, based on the

7 Company's updated claim as displayed above, my recommended adjustment is

8 updated to $38,816 ($132,498 - $93,682).

9

10 **<u>CHEMICAL EXPENSE</u>**

11 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**

12 **FOR CHEMICAL EXPENSE.**

13 A. I recommended an allowance of $72,658 or a reduction of $56,547 ($129,205 -

14 $72,658) to the Company's claim.[10] It should be noted that this recommended

15 allowance does not reflect the adjustment being proposed by I&E witness Esyan

16 Sakaya in I&E Statement No. 3. My recommendation to average the historic costs

17 smooths the historic years' expense fluctuation, while recognizing factors that

18 affect chemical expense.

[10] I&E Statement No. 1, pp. 7-9.

1 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

2 A. Yes. CUPA witness David Clark disagrees with my recommendation.

3

4 **Q. SUMMARIZE MR. CLARK'S RESPONSE.**

5 A. Mr. Clark states the basis for the Company's claim as follows: forecast by unit
6 demand for each chemical type, forecasted unit cost for each chemical, changes
7 due to permit compliance requirements, and additional requirements for the Penn
8 Estates system.[11] Mr. Clark continues to propose the original claim of $129,205.[12]

9

10 **Q. WHAT IS YOUR RESPONSE TO MR. CLARK'S POSITION ON YOUR**
11 **RECOMMENDED CHEMICAL EXPENSE ADJUSTMENT?**

12 A. The practice of normalizing historic data to predict future levels of expense is
13 common and appropriate. This is especially true in the case of the Company's
14 chemical expense claim due to the historic increases of this expense.

15

16 **Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR**
17 **CHEMICAL EXPENSE?**

18 A. No. I continue to recommend an allowance of $72,658 or a reduction of $56,547
19 ($129,205 - $72,658) for chemical expense.

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[11] CUPA WW Statement No. 3-R, p. 9.
[12] CUPA WW Statement No. 3-R, p. 11.

1 **MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE**

2 **Q. SUMMARIZE YOUR RECOMMEDATION IN DIRECT TESTIMONY**

3 **FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE.**

4 A. I recommended an allowance of $101,756 or a reduction of $32,800 ($134,556 -

5 $101,756) to the Company's claim. This recommendation reflects disallowance of

6 the $32,800 FPFTY deferred maintenance expense. Routine operating expenses

7 are not appropriately subjected to deferral treatment, representing an out of period

8 expense. Therefore, the Company should not be granted permission to recover

9 prior period routine operating expenses.[13]

10

11 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**

12 A. Yes. CUPA witness David Clark disagrees with my recommendation.

13

14 **Q. SUMMARIZE MR. CLARK'S RESPONSE.**

15 A. Mr. Clark states that materials, supplies, and other maintenance expenses do not

16 recur annually and suggests these expenses are most accurately recognized equally

17 over the length of their life.[14] Mr. Clark contends that disallowance of these

18 expenses does not allow the utility the opportunity to recover the cost of these

19 expenses.[15]

---

[13] I&E Statement No. 1, p. 10.
[14] CUPA WW Statement No. 3-R, p. 13.
[15] CUPA WW Statement No. 3-R, p. 13.

Q. WHAT IS YOUR RESPONSE TO MR. CLARK'S ASSERTIONS?

A. It is inappropriate for the Company to defer prior year expenses to the FPFTY without proper justification or prior Commission approval for such deferrals. Additionally, per Mr. Clark's testimony, these are known and measurable routine business expenses;[16] therefore, they are not extraordinary in nature. Given the lack of prior approval and the nature of the expenses, the Company's $32,800 deferred maintenance expense claims as a component of materials, supplies, and other maintenance expense should be disallowed.

Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE?

A. No. I continue to recommend disallowance of the $32,800 deferred maintenance expense which reduces the Company's materials, supplies, and other maintenance expense claim. My recommended allowance for this is expense remains $101,756 ($134,556 - $32,800).

<u>RATE CASE EXPENSE</u>

Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY FOR RATE CASE EXPENSE.

A. First, I recommended the Company normalize its rate case expense as opposed to

[16] CUPA WW Statement No. 3-R, p. 13.

amortizing the expense. Subsequently, I recommended that the unamortized rate case expense ($33,774) (as included in the O&M portion of the claim) be disallowed as this is not consistent with normalization treatment. The removal of the unamortized rate case resulted in a total rate case expense of $140,084 normalized over four years, yielding an annual rate case expense allowance of $35,021. My recommendation decreased rate case expense by $8,443 ($43,464 - $35,021) annually. Finally, and to keep the Company's allowance consistent with normalization treatment, I recommended the $140,084 deferred rate case expense be disallowed for rate base treatment.[17]

Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?

A. Yes. CUPA witness Perry Brown responded to my recommendation.

Q. PLEASE SUMMARIZE MR. BROWN'S RESPONSE.

A. Mr. Brown states the Company accepts my recommendations to normalize rate case expense and remove unamortized rate case expense from the normalized level of rate case expense.[18] Mr. Brown also explains that the Company never actually included any deferred rate case expense in its rate base claim.[19] Lastly, the

[17] I&E Statement No. 1, pp. 14-16.
[18] CUPA WW Statement No. 2-R, p. 5.
[19] CUPA WW Statement No. 2-R, p. 6.

Company is proposing to adjust the normalization period to three years from four years.[20]

Q. WHAT IS THE COMPANY'S UPDATED CLAIM BASED ON THE CHANGE TO A THREE-YEAR NORMALIZATION PERIOD?

A. The Company's updated claim is $46,695 ($140,084 ÷ 3 years) based on dividing the Company's total claim over three years.

Q. WHAT IS THE BASIS FOR THE COMPANY'S NORMALIZATION PERIOD ADJUSTMENT?

A. Mr. Brown asserts it is appropriate for CUPA to adjust the proposed normalization period as a four-year normalization period would not allow the Company the opportunity to recover the cost of rate case expense before its next rate case based on historic rate case filing frequency.[21]

Q. WHAT IS YOUR RESPONSE TO MR. BROWN'S ASSERTION?

A. Upon review of Mr. Brown's rebuttal testimony, I realized I made a miscalculation of the filing frequency for each division, which led me to believe the proposed four-year normalization period was conservative.[22] Thus, I did not recommend an adjustment to the normalization period. Correcting the error revealed the historic

[20] CUPA WW Statement No. 2-R, pp. 5-6.
[21] CUPA WW Statement No. 2-R, p. 6.
[22] I&E Exhibit No. 1-SR, Schedule 1.

rate case filing frequency for CUPA's water division is four years and for CUPA's wastewater division is five years.[23] Recognizing the prudence of consolidating these rate case filings, a historic consolidated rate case filing frequency is still larger than the Company's initial claim of four years.[24] With these statements considered, I continue to recommend the originally proposed normalization period of four years, which is conservative in nature.

Further, Mr. Brown still seems to be confusing normalization with amortization in his recommendation to shorten the "recovery period." Normalization does not recover the current rate case expense; it provides for an ongoing amount of rate case expense in base rates to prospectively fund rate case costs between rate case filings. It is appropriate to use the historic filing frequency as I have done to establish the allowance included in base rates for prospective recovery of future rate case costs.

Q. DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATION FOR RATE CASE EXPENSE?

A. Yes. First, I recognize the Company's acceptance of my recommendations to use normalization for ratemaking purposes and to remove unamortized rate case expense from the current level of rate case expense. Secondly, I do not agree with the Company's proposal to adjust the normalization period to three years; I

[23] I&E Exhibit No. 1-SR, Schedule 2.
[24] I&E Exhibit No. 1-SR, Schedule 2.

1 continue to recommend a four-year normalization period as explained above.
2 Accordingly, my recommendation is updated to a reduction of $11,674 ($46,695 -
3 $35,021) to account for the Company's revised claim in rebuttal testimony.
4 Finally, I accept Mr. Brown's explanation about deferred rate case expense of
5 $140,084 never being included in the Company's rate base claim, therefore, I
6 withdraw my recommendation to decrease rate base by $140,084.
7
8 **CASH WORKING CAPITAL**
9 **Q. SUMMARIZE YOUR RECOMMENDATION IN DIRECT TESTIMONY**
10 **FOR CASH WORKING CAPITAL.**
11 A. I recommended a cash working capital (CWC) allowance of $209,092 that is
12 adjusted to recognize the expense adjustments recommended in Mr. Sakaya's and
13 my direct testimony for those expenses included in the CWC computation.
14
15 **Q. DID ANY WITNESS RESPOND TO YOUR RECOMMENDATION?**
16 A. Yes. CUPA witness David Clark addresses CWC in his rebuttal testimony, and he
17 disagrees with my CWC recommendation based on CUPA's disagreement with my
18 recommended adjustments to individual O&M expenses.
19
20 **Q. WHAT IS THE COMPANY'S UPDATED CWC CLAIM?**
21 A. Mr. Clark states the Company's updated CWC claim is $231,205 to include all

O&M expense adjustments included in the Company's rebuttal testimony.[25]

Q. DO YOU AGREE WITH THE COMPANY'S CLAIM?

A. No. Based on my disagreement and I&E witness Esyan Sakaya's disagreement with certain individual O&M expenses as explained above and in I&E Statement No. 3, I have updated my recommendation for CWC.

Q. SUMMARIZE WHERE EACH OF THE I&E RECOMMENDED O&M EXPENSE ADJUSTMENTS ARE REFLECTED IN THE CWC COMPUTATION.

A. The adjustments are as follows:

O&M Expenses	Adjustment
Employee Pensions & Benefits	($38,816)
Chemical Expense	($56,547)
Materials, Supplies, and Other Maintenance Expense	($32,800)
Rate Case Expense	($11,674)
Total	**($139,837)**

The sum of the O&M adjustments reduces the Company's CWC amount by $17,480 calculated as follows: [(45 x $139,837) ÷ 360].

[25] CUPA WW Statement No. 3-R, p. 5.

Q. SUMMARIZE YOUR UPDATED RECOMMENDED ALLOWANCE FOR CWC.

A. I recommend an updated CWC allowance of $213,725 or a reduction of $17,480 ($231,205 - $213,725) to the Company's claim. This change recognizes the expense adjustments recommended in Mr. Sakaya's and my surrebuttal testimony for those expenses included in the cash working capital computation.

Q. DOES YOUR RECOMMENDED CWC ALLOWANCE REPRESENT A FINAL RECOMMENDED ALLOWANCE?

A. No. All adjustments to the Company's claims for revenues, expenses, taxes, and rate base must be consistently brought together in the Administrative Law Judges' Recommended Decision and again in the Commission's Final Order. This process, which is known as iteration, effectively prevents the determination of a precise calculation until all adjustments have been made to the Company's claim.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

I&E Exhibit No. 1-SR
Witness: Zachari Walker

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC.
WASTEWATER DIVISION

Docket No. R-2021-3025207

Exhibit to Accompany

the

Surrebuttal Testimony

of

Zachari Walker

Bureau of Investigation & Enforcement

Concerning:

OPERATING AND MAINTENANCE EXPENSES

CASH WORKING CAPITAL

Filing Frequency (With Miscalculation)

Wastewater Division

System	Docket	Filing Date	Months	Years
Community Utilities of Pennsylvania (Wastewater)	R-2021-3025206	4/12/2021		
Community Utilities of Pennsylvania (Wastewater)	R-2019-3008948	4/1/2019	24	2.00
Penn Estates (Wastewater)	R-2013-2370455	6/28/2013	69	5.75
Utilities Inc Pennsylvania	R-2009-2117402	6/30/2009	48	4.00
Penn Estates (Wastewater)	R-2009-2117740	6/29/2009	48	4.00
		Historic Frequency	47.25	3.94

Water Division

System	Docket	Filing Date	Months	Years
Community Utilities of Pennsylvania (Water)	R-2021-3025207	4/12/2021		
Community Utilities of Pennsylvania (Water)	R-2019-3008947	4/1/2019	24	2.00
Community Utilities of Pennsylvania (Water)	R-2016-2538660	4/6/2016	36	3.00
Penn Estates (Water)	R-2011-225159	9/30/2011	54	4.50
Utilites of Westgate	R-2009-2117389	6/30/2009	27	2.25
		Historic Frequency	35.25	2.94

Total Company

	Months	Years
Historic Frequency	41.25	3.44

Filing Frequency (With Correction)

Wastewater Division

System	Docket	Filing Date	Months Preceding Sequential Filing	Years Sequential Filing
Community Utilities of Pennsylvania (Wastewater)	R-2021-3025206	4/12/2021		
Community Utilities of Pennsylvania (Wastewater)	R-2019-3008948	4/1/2019	24	2.00
Penn Estates (Wastewater)	R-2013-2370455	6/28/2013	69	5.75
Utilities Inc Pennsylvania	R-2009-2117402	6/30/2009	117	9.75
Penn Estates (Wastewater)	R-2009-2117740	6/29/2009	48	4.00
		Historic Frequency	64.5	5.38

Water Division

System	Docket	Filing Date	Months Preceding Sequential Filing	Years Sequential Filing
Community Utilities of Pennsylvania (Water)	R-2021-3025207	4/12/2021		
Community Utilities of Pennsylvania (Water)	R-2019-3008947	4/1/2019	24	2.00
Community Utilities of Pennsylvania (Water)	R-2016-2538660	4/6/2016	36	3.00
Penn Estates (Water)	R-2011-225159	9/30/2011	54	4.50
Utilites of Westgate	R-2009-2117389	6/30/2009	81	6.75
		Historic Frequency	48.75	4.06

Total Company

	Months	Years
Historic Frequency	56.63	4.72

I&E Statement No. 2-SR
Witness: Christopher Keller

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA – WASTEWATER DIVISION

Docket No. R-2021-3025207

Surrebuttal Testimony

of

Christopher Keller

Bureau of Investigation & Enforcement

Concerning:

Rate of Return

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INTRODUCTION OF WITNESS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Christopher Keller. My business address is Pennsylvania Public Utility Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg, PA 17120.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

Q. ARE YOU THE SAME CHRISTOPHER KELLER WHO SUBMITTED THE DIRECT TESTIMONY CONTAINED IN I&E STATEMENT NO. 2 AND I&E EXHIBIT NO. 2?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to address statements made by Community Utilities of Pennsylvania Inc. – Wastewater Division (CUPA or Company) witness Dylan W. D'Ascendis (CUPA Statement No. 5-R) in his rebuttal testimony regarding rate of return topics including the cost of common equity and the overall fair rate of return, which will be applied to the Company's rate base.

Q. DID THE COMPANY PROVIDE AN UPDATE TO ITS RATE OF RETURN?

A. Yes. Mr. D'Ascendis performed a similar analysis as to what was included in his direct testimony and exhibit using more recent data available as of August 13, 2021. Mr. D'Ascendis also updated his proxy group to remove Essential Utilities, Inc. as it no longer met his criteria that 70% or greater of its total assets should be attributable to regulated water operations. Although Mr. D'Ascendis provided an update to his cost of equity analysis, he does not change his recommendation and continues to recommend a cost of equity of 10.35% (CUPA Statement No. 5-R, pp. 5-6). Below is the Company's rate of return claim (CUPA Schedule DWD-1R, p. 1):

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	10.35%	4.93%
Total	100.00%		7.57%

Q. DID THE COMPANY USE A 7.57% ROR TO CALCULATE ITS REQUESTED REVENUE REQUIREMENT?

A. No. CUPA witness David Clark uses an ROR of 7.58% to calculate the Company's requested increase (CUPA WW Exhibit No. DMC-1R).

Q. PLEASE EXPLAIN WHY YOU HAVE NOT PERFORMED AN UPDATED ANALYSIS.

A. While I do not dispute Mr. D'Ascendis' use of updated information, it is important to note that financial information from respected and commonly used sources such as Value Line, Yahoo! Finance, Morningstar, Zacks, etc. is updated regularly (monthly,

weekly, daily, hourly, etc. depending on the source). At the time of my analysis, I utilized the most recent financial information accessible to me. It should be recognized that it is not always prudent or time conducive in the scope of a rate case to continuously change one's position.

<u>SUMMARY OF MR. D'ASCENDIS' REBUTTAL TESTIMONY</u>

Q. SUMMARIZE MR. D'ASCENDIS' RESPONSE TO YOUR ROR RECOMMENDATIONS.

A. Mr. D'Ascendis disputes my recommendations by first claiming that I failed to consider the results of cost of equity models other than the Discounted Cash Flow (DCF) model. Next, he criticizes my application of the Capital Asset Pricing Model (CAPM), claiming that I have incorrectly relied on the 10-year Treasury Bond for my risk-free rate and have not employed the Empirical CAPM (ECAPM). Mr. D'Ascendis claims that I fail to account for CUPA's size-specific risk. Mr. D'Ascendis also takes issue with my dismissal of his Non-Price Regulated Proxy Group. Finally, Mr. D'Ascendis opines that the Commission-determined Distribution System Improvement Charge (DSIC) rates should serve as the bare minimum cost of equity in this proceeding.

DSIC RATES

Q. PLEASE SUMMARIZE MR. D'ASCENDIS' THEORY THAT THE DSIC RATE CALCULATED BY THE COMMISSION FOR WATER AND WASTEWATER UTILITIES SHOULD SERVE AS THE MINIMUM AUTHORIZED COST OF EQUITY IN THIS PROCEEDING.

A. Mr. D'Ascendis claims that the cost of equity in a rate case should not be lower than the DSIC rate calculated by the Commission for water and wastewater companies. He makes this assertion on the basis that the DSIC rate applies only to transmission and distribution investments, which are lower risk investments compared to the production and treatment of water and wastewater (CUPA Statement No. 5-R, p. 18).

Q. WHAT IS YOUR RESPONSE TO MR. D'ASCENDIS' ASSERTION THAT THE DSIC RATE CALCUATED BY THE COMMISSION FOR WATER AND WASTEWATER UTILITIES SHOULD SERVE AS THE MINIMUM AUTHORIZED COST OF EQUITY IN THIS PROCEEDING?

A. Mr. D'Ascendis' comparison between the I&E recommended return on equity in this proceeding and the DSIC rate calculated by the Commission for water and wastewater utilities is misguided. The DSIC return for utilities is calculated differently than the equity return in a base rate case. The DSIC rate is designed to encourage its use and to incentivize accelerated pipeline replacement and infrastructure upgrades to bring the existing aging infrastructure closer to meeting safety and reliability requirements in between base rate filings. To suggest the cost of equity must be at or above the DSIC rate in this base rate proceeding is inappropriate and not in the public interest.

Additionally, the DSIC rate establishes a benchmark above which a utility company is considered "overearning." As such, the DSIC rate does not serve as a proper measurement of a subject utility's cost of equity in a rate case proceeding. In fact, 66 Pa. C.S. § 1358(b)(3) states the following:

> The distribution system improvement charge shall be reset at zero if, in any quarter, data filed with the commission in the utility's most recent annual or quarterly earnings report show that the utility will earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the distribution system improvement charge.

Finally, the DSIC mechanism serves to lower a utility's risk because it reduces the lag time in the recovery of a company's capital outlays.

<u>DISCOUNTED CASH FLOW</u>

Q. SUMMARIZE MR. D'ASCENDIS' REBUTTAL TESTIMONY REGARDING YOUR DCF ANALYSIS.

A. Mr. D'Ascendis opines that I have inappropriately relied solely on the DCF model for my cost of equity recommendations (CUPA Statement No. 5-R, p. 7, lines 13-15). Next, he presents two cases where he claims the Commission has considered multiple cost of equity models (CUPA Statement No. 5-R, pp. 10-11). Then, Mr. D'Ascendis argues that market-to-book (M/B) ratios over the past decade have increased significantly for the water industry, and likely cause the DCF results in this proceeding to understate the investor-required return. He argues that the difference between the market value, on which investors evaluate and receive their returns, and the book value, on which regulators authorize returns, will cause the market-based

results of the DCF, which are applied to the book value capital structure, to understate the cost of equity (CUPA Statement No. 5-R, pp. 7-14). Finally, although Mr. D'Ascendis is not advocating for a leverage adjustment to the results of the DCF, he claims he provided the discussion with the purpose of demonstrating the model's limitations and supporting the use of multiple models (CUPA Statement No. 5-R, p. 17, lines 18-24).

<u>ALLEGED SOLE RELIANCE ON THE DCF</u>

Q. PLEASE RESPOND TO MR. D'ASCENDIS' ASSERTION THAT YOU RELIED SOLELY ON THE DCF.

A. As stated in my direct testimony, while my recommendation was based on the results of my DCF analysis, I also employed the CAPM as a comparison. The result of my DCF analysis is 9.24% while the result of my CAPM analysis is 9.56%, both of which are significantly lower than the Company's claim of 10.35%. For the reasons discussed in my direct testimony, the DCF method is the most reliable (I&E Statement No. 2, pp. 15-16). I have considered the fact that no method can perfectly predict the return on equity, which is why I also use the CAPM as a comparison to the DCF. Although no one method can capture every factor that influences an investor, including the results of methods less reliable than the DCF does not make the end result more reliable or more accurate. As a result, I stand by my method of using the DCF with a CAPM comparison, which is consistent with the methodology historically

used by the Commission in base rate proceedings, even as recently as 2017, 2018, 2020, and 2021.[1]

Q. WHICH CASES DOES MR. D'ASCENDIS PRESENT WHERE HE CLAIMS THE COMMISSION HAS CONSIDERED MULTIPLE COST OF EQUITY MODELS?

A. Mr. D'Ascendis presents the 2013 Columbia Water Company[2] and the 2014 Emporium Water Company[3] cases to suggest the Commission has considered multiple cost of common equity models (CUPA Statement No. 5-R, pp. 10-11).

Q. WHAT COMMENTS DO YOU HAVE REGARDING THE CASES MR. D'ASCENDIS PRESENTS?

A. First, within the citation Mr. D'Ascendis presents regarding the Columbia Water Company case, the Commission specifically states that it used the DCF method as the foundation in determining the cost of equity (CUPA Statement No. 5-R, p. 10, lines 5-8). Any adjustments to the cost of equity after the fact are at the Commission's discretion and independent of the result of any cost of equity model. Regarding the

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[1] *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company;* Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.;* Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131. *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

[2] *Pa. PUC v. The Columbia Water Company*, Docket No. R-2013-2360798, Order Entered January 23, 2014.

[3] *Pa. PUC v. Emporium Water Company*, Docket No. R-2014-2402324, Order Entered January 28, 2015.

Emporium Water Company case, the Commission simply summarized the recommendations presented by OCA, I&E, and the Company, it did not specifically comment on which model(s) it relied on (CUPA Statement No. 5-R, p. 10, lines 18-37). Again, as I stated in my direct testimony, I did in fact employ the CAPM as a comparison to my DCF result and my recommendation is consistent with the methodology historically used by the Commission in base rate proceedings, even as recently as 2017, 2018, 2020, and 2021[4] (I&E Statement No. 2, p. 14, lines 14-18).

MARKET-TO-BOOK RATIO

Q. WHAT DOES MR. D'ASCENDIS CLAIM REGARDING MARKET-TO-BOOK RATIOS IN THIS PROCEEDING?

A. He opines that a M/B ratio above 1.0, which is currently the situation for the proxy group companies, is causing the market based DCF to understate the return required by investors (CUPA Statement No. 5-R, pp. 11-12).

[4] *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150 (Order Entered March 28, 2017). *See generally* Disposition of Cost Rate Models, pp. 96-97; *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Cost of Common Equity, p. 119; *Pa. PUC v. Wellsboro Electric Company;* Docket No. R-2019-3008208 (Order Entered April 29, 2020). *See generally* Disposition of Primary Methodology to Determine ROE, pp. 80-81; *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 91-92. *Pa. PUC v. Columbia Gas of Pennsylvania, Inc.;* Docket No. R-2020-3018835 (Order Entered February 19, 2021). *See generally* Disposition of Cost of Common Equity, p. 131; *Pa. PUC v. PECO Energy Company – Gas Division*; Docket No. R-2020-3018929 (Order Entered June 22, 2021). *See generally* Disposition of Return of Rate on Common Equity, p. 171.

Q. DOES A MARKET-TO-BOOK RATIO ABOVE ONE (1.0) CAUSE THE DCF TO INCORRECTLY ESTIMATE THE INVESTOR-REQUIRED RETURN ON EQUITY?

A. No. Although, there are differences between the book value and market value of water utilities, Mr. D'Ascendis' assertion that the difference causes the DCF to undervalue the rate of return assumes that investors are unaware of the difference. The forecasted growth rates used in the DCF are set by analysts based on current conditions and what they expect the future could be for the stock. As Mr. D'Ascendis points out, the current market-to-book ratios for the water proxy group are extraordinarily high compared with the ten-year average. In this scenario, no rational investor would invest in a utility stock that has been trading above book value for several years and be surprised that rates continue to be set based on the book value capital structure. A market-to-book ratio of above 1.0 for utility stocks reflects their value in the market and implies that investors expect future cash flows to be more valuable than the historical accounting value of the company. Since the stock market is impacted by regulatory policies, and the economic and financial conditions, a market-to-book ratio could be less than 1.0 when the stock market is in a depression, or a company is experiencing under-performance, so it is inappropriate to evaluate DCF results with the market-to-book ratio.

CAPITAL ASSET PRICING MODEL

Q. SUMMARIZE MR. D'ASCENDIS' RESPONSE TO YOUR CAPM ANALYSIS.

A. Mr. D'Ascendis disputes my use of the 10-year U.S. Treasury Note as a proxy to

measure the risk-free rate that I use in my CAPM analysis as well as the inputs I chose from Blue Chip forecasts. He also disagrees with my exclusion of the ECAPM method of computing the Company's return on equity (CUPA Statement No. 5-R, p. 21, lines 25-28).

<u>RISK-FREE RATE</u>

Q. WHAT IS MR. D'ASCENDIS' RESPONSE TO YOUR USE OF THE YIELD ON THE 10-YEAR U.S. TREASURY BOND?

A. Mr. D'Ascendis claims his use of the yield on a 30-year U.S. Treasury Bond is more appropriate than my use of the yield on a 10-year Treasury Bond because it better reflects the life of the underlying investment. He also claims that not incorporating the longest projection available is inconsistent with the DCF assumption of a constant rate of dividend growth and the Efficient Market Hypothesis (EMH), which assumes that all available information is considered by investors (CUPA Statement No. 5-R, pp. 22-24).

Q. IS THE LIFE OF THE INVESTMENT THE ONLY FACTOR THAT SHOULD BE CONSIDERED IN THE CHOICE OF A RISK-FREE RATE?

A. No. The risk-free rate is the return that can be earned without accepting any risk, and while the life of the investment can be considered in the choice of risk-free rates, the most important consideration is that the rate be as risk-free as possible. As explained in my direct testimony, I chose the 10-year Treasury Note as it mitigates the short-comings of the short-term Treasury-Bill and the 30-year Treasury Bond (I&E

Statement No. 2, p. 25). Although long-term Treasury Bonds have less risk of being influenced by federal policies, they have substantial maturity risk associated with market risk. In addition, long-term Treasury Bonds bear the risk of unexpected inflation. As such, my choice of a 10-year Treasury Note is appropriate. Further, as also pointed out in my direct testimony, the Commission recently agreed with I&E that the 10-year Treasury Note is the superior measure of the risk-free rate of return.[5]

Q. DOES THE PROJECTED RISK-FREE RATE NEED TO REPRESENT THE LONGEST TIME PERIOD AVAILABLE AS MR. D'ASCENDIS CLAIMS?

A. No. The time period reflected in a projected risk-free rate should include the period in which rates will be in effect. Since CUPA is not setting rates to be applicable far into the future, using projections for seven or more years from now, as Mr. D'Ascendis suggests, is inappropriate (CUPA Statement No. 5-R, p. 23, lines 8-10). The yield on the 10-year Treasury Note is expected to range between 1.80% and 2.10% from the third quarter of 2021 through the third quarter of 2022 and is forecasted to be 2.90% from 2023-2027. For my forecasted CAPM analysis I calculated 2.12%, which is the average of all the yields I observed (I&E Exhibit No. 2, Schedule 8). In addition, the further out into the future one forecasts, the less reliable and more speculative the estimates become; therefore, to give more weight to less reliable estimates would not be prudent. My calculation provides a balance of shorter-term future estimates.

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[5] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018). *See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 99.

1 **EXCLUSION OF THE ECAPM**

2 **Q. PLEASE SUMMARIZE MR. D'ASCENDIS' RESPONSE TO YOUR**
3 **EXCLUSION OF THE ECAPM IN YOUR ANALYSIS.**

4 A. Mr. D'Ascendis asserts that the empirical Security Market Line (SML) described by
5 the traditional CAPM is not as steeply sloped as the CAPM model predicts and that
6 tests of the CAPM have measured the level of which security returns and betas are
7 related as predicted by the CAPM (CUPA Statement No. 5-R, pp. 24-27).
8

9 **Q. WHY IS THE ECAPM EXCLUDED FROM YOUR ANALYSIS?**

10 A. The ECAPM is a modified version of the CAPM which attempts to address the belief
11 that the actual risk vs. return correlation is flatter than what is predicted by the
12 CAPM. The implication is that the CAPM under-estimates returns with lower levels
13 of risk and over-estimates the returns associated with higher levels of risk. The model
14 entails assigning 25% weight to the market beta and 75% weight to the individual
15 company or proxy group.[6]

16 Additionally, the use of the ECAPM in estimating the cost of capital does not
17 increase the validity of the result but merely adds another measure of subjectivity to
18 the CAPM in an attempt to make the SML more accurate. The ECAPM reduces the
19 purpose of the beta, which is the only company-specific variable in the CAPM model.
20 This additional layer of subjectivity provides an even stronger basis to rely on the
21 DCF as the primary method to calculate a utility's cost of equity.

[6] David C. Parcell, "The Cost of Capital – A Practitioner's Guide," 2010 Edition, p. 104.

Q. HAVE YOU CHANGED YOUR CAPM RETURN ON EQUITY (ROE) RECOMMENDATION AS A RESULT OF MR. D'ASCENDIS' REBUTTAL TESTIMONY?

A. No. I continue to recommend using my CAPM result of 9.56% (I&E Exhibit No. 2, Schedule 10) as a comparison to my DCF result of 9.24% (I&E Exhibit No. 2, Schedule 6).

<u>SIZE ADJUSTMENT</u>

Q. SUMMARIZE YOUR DIRECT TESTIMONY REGARDING MR. D'ASCENDIS' CLAIM FOR AN ADJUSTMENT FOR THE COMPANY'S SMALL SIZE.

A. In direct testimony, I stated that Mr. D'Ascendis' 100-basis point adjustment is unnecessary because none of the technical literature cited in his direct testimony supporting an adjustment related to the size of a company is specific to the utility industry. Additionally, I presented an article by Dr. Annie Wong that demonstrated there is no need to make an adjustment for the size of a company in utility rate regulation. Finally, the Commission has recently rejected the application of a size adjustment to the cost of equity calculation (I&E Statement No. 2, pp. 32-34).

Q. SUMMARIZE MR. D'ASCENDIS' RESPONSE IN REBUTTAL TESTIMONY REGARDING A SIZE RISK FACTOR ADJUSTMENT.

A. Mr. D'Ascendis opines that firms of smaller size are less able to cope with significant events affecting sales, are less diverse in their operations, and have less financial

flexibility. He supports these statements by pointing to two studies from Fama and French and Duff and Phelps relating the size of a company to its ROE. Mr. D'Ascendis also attempts to discredit a study performed by Dr. Wong, which I&E relied upon in rejection of his size adjustment, by citing a review of her study authored by Thomas M. Zepp. Additionally, Mr. D'Ascendis inaccurately asserts that I&E claims his size risk premium is not specific to utilities because the study he cites utilizes data from the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and National Association of Security Dealers Automated Quotation System (NASDAQ). Finally, Mr. D'Ascendis points to a 2019 Commission order where the Commission considered a size adjustment (CUPA Statement No. 5-R, pp. 27-33).

Q. ARE MR. D'ASCENDIS' ASSERTIONS REGARDING FIRMS OF SMALLER SIZE RELEVANT TO THE REGULATED UTILITY INDUSTRY?

A. No. The study performed by Dr. Wong provides empirical evidence that refutes Mr. D'Ascendis' claim which I will further elaborate upon below.

Q. WHAT ARE YOUR OBSERVATIONS REGARDING THE STUDIES MR. D'ASCENDIS RELIES ON TO SUPPORT HIS CLAIM OF A SIZE ADJUSTMENT?

A. The Fama and French and Duff and Phelps studies are not specific to the utility industry. While I&E relied upon the Fama and French study in this proceeding, as Mr. D'Ascendis correctly points out, the purpose for which I&E cited to the study was to demonstrate empirically the shortcomings of the CAPM. The Fama and

French study is irrelevant toward the determination of the size risk factor because it is not specific to the utility industry.

Q. PLEASE COMMENT ON THE REVIEW OF DR. WONG'S STUDY PERFORMED BY DR. ZEPP.

A. The article Mr. D'Ascendis references from Dr. Zepp does not recreate Dr. Wong's study; it simply speculates on other possible reasons for her results and references the results of two other studies. The first study, completed by California Public Utilities Commission Staff in 1991, is not included in the article, and, therefore, Dr. Zepp's opinions cannot be properly evaluated. Dr. Zepp also draws his conclusions about an entire industry based on the second study, which examines the effects of size on only four water utility companies. This article does not contain enough credible evidence to refute Dr. Wong's findings.

Q. PLEASE DISCUSS THE INCORRECT INTERPRETATION MADE BY MR. D'ASCENDIS REGARDING YOUR DIRECT TESTIMONY.

A. Mr. D'Ascendis appears to have mistaken an observation I made in direct testimony as a criticism of his analysis. He incorrectly asserts in rebuttal testimony that I stated his size adjustment is not specific to utilities because the study he cites uses data from the NYSE, AMEX and NASDAQ. However, I merely observed that Mr. D'Ascendis used market information from NYSE, AMEX, and NASDAQ exchanges as a means to calculate his perceived size risk premium for CUPA. This is an important

observation because it is not appropriate to compare highly competitive private companies with regulated, monopolistic, public utilities.

Q. HAVE YOU FOUND FURTHER EVIDENCE TO SUPPORT YOUR RECOMMENDATION REGARDING SIZE ADJUSTMENTS?

A. Yes. The difficulty in predicting the risk effect of a company's size is demonstrated in the variance from year to year of the measurement of difference between the annual returns on the large and small-capitalization stocks of the NYSE/AMEX/NASDAQ in the Ibbotson *Stocks, Bonds, Bills & Inflation: 2015 Yearbook.* As stated on page 100,

> While the largest stocks actually declined in 2001, the smallest stocks rose more than 30%. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and 10th decile returns was far more substantial. The divergence in the performance of small- and large- cap stocks is evident. In 30 of the 89 years since 1926, the difference between the total returns of the largest stocks (decile 1) and the smallest stocks (decile 10) has been greater than 25 percentage points.

Page 109 states,

> In four of the last 10 years, large-capitalization stocks (deciles 1-2 of NYSE/AMEX/NASDAQ) have outperformed small-capitalization stocks (deciles 9-10). This has led some market observers to speculate that there is no size premium. But statistical evidence suggests that periods of underperformance should be expected.

Page 112 states,

> Because investors cannot predict when small-cap returns will be higher than large-cap returns, it has been argued that they do not expect higher rates of return for small stocks.

Q. WHAT IS YOUR RESPONSE TO MR. D'ASCENDIS' REBUTTAL TESTIMONY REGARDING THE REFERENCED COMMISSION ORDER FOR CITIZENS' ELECTRIC COMPANY?

A. The Commission did not in fact award an explicit 100-basis point size adjustment as the Commission determined that there was not enough evidence as to whether size is specifically a risk for utilities:

> Consistent with the foregoing discussion, like the ALJs, we shall not specify an exact size adjustment. Instead, we shall adopt the ALJs' recommendation that Citizens' be awarded a DCF cost of common equity of 9.49%. In our view, this cost of equity is reasonable and strikes an appropriate balance by recognizing the general inverse relationship between a company's size and its risk, while acknowledging that there is not substantial evidence in the record to prove that an explicit size basis point adjustment is warranted in this case.[7]

Finally, as I stated in my direct testimony, the Commission has recently rejected the application of a size adjustment to the cost of equity calculation (I&E Statement No. 2, pp. 33-34).

Q. HAS YOUR RECOMMENDATION REGARDING MR. D'ASCENDIS' SIZE ADJUSTMENT CHANGED SINCE YOUR DIRECT TESTIMONY?

A. No. I continue to recommend that any adjustments in consideration of the Company's size be disallowed.

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[7] *Pa. PUC v. Citizens Electric Company of Lewisburg, PA;* Docket No. R-2019-3008212 (Order Entered April 29, 2020). *See generally* Disposition of Cost of Common Equity, pp. 103-104.

NON-PRICE REGULATED PROXY GROUP

Q. WHAT WAS YOUR RECOMMENDATION IN DIRECT TESTIMONY CONCERNING MR. D'ASCENDIS' UTILIZATION OF A NON-REGULATED PROXY GROUP?

A. I recommended the Commission reject all analyses performed using the non-price regulated company proxy as it is highly speculative and subjective. Mr. D'Ascendis' non-regulated proxy group in effect blends the CE approach into the DCF, RP, and CAPM models where I cited that the Commission has ruled on the use of using non-utility companies in comparable groups for the use of the CE approach as being highly speculative (I&E Statement No. 2, pp. 30-32).

Q. SUMMARIZE MR. D'ASCENDIS RESPONSE REGARDING YOUR DISAGREEMENT WITH HIS USE OF A NON-REGULATED PROXY GROUP.

A. In rebuttal testimony, Mr. D'Ascendis attempts to justify the use of the companies contained in his non-regulated proxy group based on the betas and standard errors of the regression being similar to that of the companies in his water company proxy group and therefore opining they are similar to CUPA (CUPA Statement No. 5-R, pp. 39-41)

Q. HAS MR. D'ASCENDIS PROVEN THAT THE RISKS FACED BY HIS NON-REGULATED PROXY GROUP ARE SIMILAR TO THAT OF HIS WATER UTILITY GROUP?

A. No. The risks faced in each industry for the companies used in Mr. D'Ascendis' unregulated group differ from the risks faced by his water utility group. Specifically, the level of competition between non-price regulated companies and monopolies, which utilities largely are, is too difficult a factor to control. Although beta is an indicator of a company's investment risk in relation to the entire stock market, beta is not a quantification of the total investment risk of a given company. Mr. D'Ascendis' unregulated proxy group may have a beta comparable to that of his water group, but that does not mean the companies face sufficiently similar risks to be used as a substitute for an industry's market. Both beta and the standard error of regression are measures of the past performance of a stock and as such do not necessarily reflect where an industry is going or what risks it is expected to face.

Additionally, the Commission made the following comments in a recent UGI Electric case regarding the CE method, specifically, the use of non-utility companies in comparable groups, and stated,[8]

> With respect to the CE method, as noted above, this cost of equity method utilizes data for non-regulated firms. Thus, by its very nature, determining which companies are comparable is entirely subjective. In addition, the record indicates that the companies UGI utilized in its CE group results in the selection of companies such as Coca-Cola Company, Kellogg Company, and Walmart

[8] *Pa. PUC v. UGI Utilities, Inc. – Electric Division;* Docket No. R-2017-2640058 (Order Entered October 25, 2018), p. 105. The Commission has also ruled "[t]he use of nonregulated companies as a comparable group for regulated firms requires numerous unsupportable assumptions which results in a highly speculative finding." *Pennsylvania Public Utility Commission v. Philadelphia Electric Co.* 33 PUR 4th 319, 341 (Pa PUC 1980).

> Stores, Inc.…Each of these companies operate in industries that are very different from a utility company and have significantly more competition, which would require a higher return for the associated additional risk.

Finally, I am advised by counsel that this premise defies the principle set forth in the *Hope* and *Bluefield cases*[9] that a utility is entitled to a return similar to that being earned by companies with similar risks and uncertainties, but not as high as those earned by highly profitable or speculative ventures.

<u>OVERALL RATE OF RETURN</u>

Q. HAS YOUR OVERALL RATE OF RETURN RECOMMENDATION CHANGED FROM YOUR DIRECT TESTIMONY?

A. No. I continue to support each recommendation made in I&E Statement No. 2.

Q. PLEASE RESTATE YOUR OVERALL RATE OF RETURN RECOMMENDATION.

A. I recommend the following rate of return for CUPA:

Type of Capital	Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.24%	4.41%
Total	100.00%		7.05%

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

[9] *See Bluefield Water Works & Improvements Co. v. Public Service Comm. of West Virginia,* 262 U.S. 679,692-93 (1923), and the *FPC v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944).

I&E Statement No. 3-SR
Witness: Esyan A. Sakaya

PENNSYLVANIA PUBLIC UTILITY COMMISSION

v.

COMMUNITY UTILITIES OF PENNSYLVANIA INC –
WASTEWATER DIVISION

Docket No. R-2021-3025207

Surrebuttal Testimony

of

Esyan A. Sakaya

Bureau of Investigation and Enforcement

Concerning:
Rate Base
Plant Additions
Accrued Depreciation
Annual Depreciation Expense
Inflow and Infiltration
Rate Structure
Public Input Hearing and DEP issues
Scale Back of Rates

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INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Esyan A. Sakaya. My business address is 400 North Street, Harrisburg, Pennsylvania 17120.

Q. ARE YOU THE SAME ESYAN A. SAKAYA THAT SUBMITTED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes. I submitted the Bureau of Investigation and Enforcement's ("I&E") Statement No. 3 and I&E Exhibit No. 3 on August 13, 2021.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to address the rebuttal testimony of Community Utilities of Pennsylvania, Inc. - Wastewater CUPA witness Perry Brown (CUPA-WW St. No. 2-R), CUPA witness David Clark (CUPA-WW St. No. 3-R), CUPA witness Andrew Dickson (CUPA-WW St. No. 4-R), and CUPA witness Emily Long (CUPA-W&WW St. No. 7-R).

Q. DOES YOUR SURREBUTTAL TESTIMONY INCLUDE AN EXHIBIT?

A. No. However, I will refer to my direct testimony and exhibit in this surrebuttal testimony.

Q. DID THE COMPANY AGREE WITH ANY OF THE RECOMMENDATIONS YOU MADE IN DIRECT TESTIMONY?

A. Yes. The Company stated that they were willing to provide the requested updates comparing projected and actual plant additions in a timely manner (CUPA-WW St. No. 3-R, p. 5), and the Company also agreed with my recommendation that forfeited discount revenue be increased by $2,751 under proposed rates (CUPA-WW St. No. 2-R, p. 1). The remaining issues that I raised in my direct testimony are addressed below.

<u>RATE BASE</u>

Q. WHAT RATE BASE DID THE COMPANY CLAIM FOR THE FPFTY?

A. The Company claimed a total rate base of $13,302,087 (CUPA-WW Original filing, pp. 1-14 and I&E Ex. No. 3, Sch 1, col F, line 14).

Q. WHAT RATE BASE DID YOU RECOMMEND FOR CUPA WASTEWATER IN YOUR DIRECT TESTIMONY?

A. I recommended a wastewater operations rate base of $12,846,809 (I&E Ex. No. 3, Sch. 1, col H, line 14). This was a reduction of $455,279 from the Company's original rate base of $13,302,087 shown on CUPA-WW Original filing page 1-14. The $455,279 is the result of my recommendation to adjust plant in service as described below.

1 **PLANT ADDITIONS**

2 **Q. WHAT WAS THE COMPANY'S CLAIM FOR PLANT ADDITIONS?**

3 A. The Company's total claim for plant additions in the FTY and FPFTY is
4 $5,539,427 (CUPA-WW St. No. 3, p. 17). In addition, the Company projected
5 $266,618 of combined corresponding retirements in the FTY and FPFTY (CUPA-
6 WW Supporting Schedule No. 9, line 54, and CUPA-WW Supporting Schedule
7 No. 10, line 29). Therefore, the net plant additions are $5,272,809 (CUPA-WW
8 Supporting Data, Section 1, p. 17).

9

10 **Q. WHAT PROJECTS DID YOU RECOMMEND BE REMOVED FROM THE**
11 **PROJECTED FPFTY PLANT IN SERVICE?**

12 A. I recommended two projects be removed from the projected level of plant in
13 service. First, I recommended that $449,899 for treatment and disposal equipment
14 be removed, less $86,472 of retirements, resulting in a net reduction of $363,427
15 ($449,899 - $86,472). Second, I recommended that the $104,741 project for
16 structures and improvements be removed, less the $1,509 of retirements, resulting
17 in a net reduction of $103,232 ($104,741 - $1,509). I showed the total $466,659
18 reduction to plant in service on I&E Ex. No. 3, Sch. 1, line 11, column G (I&E St.
19 No. 3. p. 9).

Q. WHY DID YOU RECOMMEND THAT THE $449,899 AND THE $104,741 PROJECTS NOT BE INCLUDED IN THE FPFTY PLANT BALANCE?

A. I recommended the removal of both projects from the FPFTY plant balance because of the lack of detail and specificity CUPA provided in the responses to I&E RB-7 and RB-11. (I&E St. No. 3, pp. 8-9). The Company indicates in both responses that the amount of each project is based upon on historical average levels of annual spending in plant additions. As shown in the interrogatory responses, the Company failed to provide sufficient details to determine the need for each project and failed to include the necessary details including a breakdown of the costs, projected starting date, and projected in service dates. I believe historical averages should not be used to speculate on future plant additions since the needs of a utility constantly change over time and should be evaluated each year.

Q. DID YOU RECOMMEND A CORRESPONDING DECREASE TO ACCRUED DEPRECIATION IF THE COMMISSION ACCEPTS YOUR RECOMMENDATION TO REMOVE THE TWO PROJECTS DESCRIBED ABOVE?

A. Yes. The Company's claim for accrued depreciation in the FPFTY is $10,455,892 (CUPA-WW Supporting Data, Section 1, p. 14 and I&E Ex. No. 3, Sch. 1, line 3, column F). Since I recommended that both of these projects be removed from the plant in service, I also recommended a corresponding decrease to accrued

depreciation equal to one year of annual depreciation expense for both projects, which amounts to $11,380 (I&E Exhibit No.3, Sch. 1, line 3, column G). The determination of the $11,380 is explained in the Annual Depreciation expense section below.

Q. SHOULD THERE BE A CORRESPONDING DECREASE IN IN ANNUAL DEPRECIATION EXPENSE IF THE COMMISSION ACCEPTS YOUR RECOMMENDATION TO REMOVE THE TWO PROJECTS DESCRIBED ABOVE?

A. Yes. The Company's claim for annual depreciation expense, less CIAC and the acquisition adjustment for the FPFTY, is $519,720 (CUPA-WW Supporting Data, Section 1, p. 11 and I&E Ex. No. 3, Sch. 2, line 7, column B). If the two proposed projects are removed, the annual depreciation expense would be reduced by the amount of the reduction times the depreciation rate. For the $449,899 project, the reduction to annual expense is $9,086. For the $104,471 project, the reduction to annual depreciation expense is $2,294. The total annual depreciation expense adjustment of $11,380 is shown on I&E Exhibit No. 3, Sch. 2, col. C, line 7.

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO REMOVE THESE TWO PROJECTS FROM THE FPFTY PLANT IN SERVICE AND THE CORRESPONDING ACCRUED DEPRECIATION AND ANNUAL DEPRECIATION EXPENSE ADJUSTMENTS?

A. Yes. The Company disagreed with my recommendation to remove these two projects for the following reasons. First, the Company claims my recommendations is not based on any specific statute or historical precedent. Second, CUPA witness Clark believes the level of capital spending that was proposed by the Company was based on actual historical average spending levels and is consistent with previous rate case submissions. Third, the Company states that these projects are not specific, defined "projects" for all capital spending, which is the reason there were not specific start/completion dates provided by the Company. Lastly the Company states that the removals would not be in the spirit of a FPFTY as the Company has every intention of investing this level of capital spending within the rate year (CUPA-WW St. No. 3-R, p. 4).

Q. PLEASE ADDRESS THE COMPANY'S CLAIM THAT PLANT ADJUSTMENTS MUST BE BASED UPON PAST PRECEDENT OR A SPECIFIC STATUTE.

A. I am advised by counsel that the Section 315(e), which permits utilities to use a FPFTY, requires utilities to supply data evidencing the accuracy of the FPFTY

estimates and that the Commission may adjust the utility's rates if the FPFTY claim is not supported. Although I recognize that the Company is authorized to utilize a FPFTY, it is a fundamental ratemaking principle that all claims must be supported to ensure that rates are just and reasonable. Accordingly, unsupported plant additions, should not be included in rate base and recovered in base rates.

Q. SHOULD THESE PROJECTS BE INCLUDED SIMPLY BECAUSE THE COMPANY CLAIMS THAT THE LEVEL OF CAPITAL SPENDING IS BASED ON A HISTORICAL AVERAGE AND CONSISTENT WITH PREVIOUS RATE CASES?

A. No. The Company must provide the details of plant additions in each case. Furthermore, the Company failed to show any prior spending levels or comparisons that would guide the Commission concerning these comparisons in this case.

Q. PLEASE ADDRESS THE COMPANY TESTIMONY CONCERNING THE "SPIRIT" OF THE FPFTY AND THE CLAIM THAT IS HAS EVERY INTENTION OF COMPLETING THESE PROJECTS BY THE END OF THE FPFTY.

A. If by "spirit" the Company believes the Commission will approve all FPFTY plant additions no matter how vague or speculative, I do not believe that is the intent of the FPFTY. The claims in the Company's filing are based upon a FPFTY, most of

which I&E has not challenged. However, I&E can challenge those claims that are unsupported or inconsistent with sound ratemaking principles. Based upon the lack of details concerning these two projects I&E continues to recommend that they be disallowed, despite the Company's claim that it intends to complete these projects by the end of the FPFTY.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATION CONCERNING THE TWO WASTEWATER PROJECTS.

A. I continue to recommend the two projects be removed from total plant in service to include a corresponding reduction to annual depreciation expense. Specifically, I recommend that rate base be reduced by $455,279 (I&E Ex. No. 3, Sch. 1, column G, line 14. I also recommend annual depreciation expense be reduced by $11,380 (I&E Ex. No. 3, Sch. 2, column C, line 4.

<u>INFLOW AND INFILTRATION</u>

Q. WHAT DID YOU RECOMMEND CONCERNING INFLOW & INFILTRATION (I&I) IN YOUR DIRECT TESTIMONY?

A. I recommended that the Company track repairs to deficient parts of its collection system and report the level of I&I in the next base rate case. The Company should also describe steps taken to reduce I&I and future plans to reduce excessive I&I (I&E St. No. 3, pp. 14-15).

Q. WHY DID YOU MAKE THIS RECOMMENDATION?

A. If I&I is reduced, the Company will reduce the overall costs in operating its wastewater system by reducing expenses related to electric and chemical treatment. This will also reduce the need for future capital improvements, additions, and upgrades since less flow will be collected and treated.

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION THAT IT TAKE STEPS TO REDUCE TRACK AND REPORT INFLOW AND INFILTRATION IN THE NEXT BASE CASE?

A. No, they did not. Therefore, my recommendation should be approved.

<u>RATE STRUCTURE</u>

Q. DID THE COMPANY PROPOSE TO REVISE ITS RATES TO CORRECT ERRORS IN THE ORIGINAL FILING?

A. Yes. For all Residential and Commercial customers, the Company is proposing a flat monthly rate of $78.22 per month. For availability customers, the Company is proposing a flat rate of $22.90 per month. For the School rate, the Company is proposing a rate of $1.61 per month per pupil. These revised rates produce an increase of $998,705 and $3,671,042 in total revenue. The $998,705 is an increase of 37.4% ($998,705 / $2,672,338) (CUPA-WW St. No. 3, Summary p. 1-9 and I&E Exhibit No. 3, Sch. 5, p. 1, columns G-I).

Q. WHAT DID YOU RECOMMEND FOR THE CONSOLIDATED AND TAMIMENT AVAILABILITY CHARGE?

A. I recommended that both availability rates be set to $11.00 per month.

Q. WHY DID YOU RECOMMEND THIS CHANGE TO THE COMPANY'S PROPOSED AVAILABILITY CHARGE?

A. The Company is proposing to increase the availability charge for Tamiment customers from $22.90 per quarter to $22.91 per month which is an increase of $15.2($22.90 - $7.63) per month or 200.1% ($15.27 / $7.63) (CUPA-WW Filing Section 2 and I&E Ex. 3, Sch. 5, p. 2, line 9, column K).

Q. WHY DID YOU RECOMMEND A LOWER AVAILABILITY CHARGE OF $11.00 PER MONTH?

A. The 200.1% increase is more than 5.3 times the system average increase of 37.4%. Accordingly, this 200.1% increase violates the concept of gradualism and should be reduced. This $11.00 per month equates to a decrease of $2.12 per month in the Consolidated system and an increase of $3.37 per month ($11.00 - $7.63) or 44.2% ($3.37 / $7.63) in the Tamiment system. The 44.2% increase is approximately the same 41.5% increase proposed for the Consolidated residential flat rate customer. This recommendation will lessen the impact to Tamiment customers while producing a reasonable amount of revenue from availability charges (I&E Ex. 3, Sch. 6, line 9, column K).

Q. DID YOUR RECOMMENDATION TO ESTABLISH AN AVAILABILITY CHARGE OF $11.00 PER MONTH REDUCE PROPOSED REVENUE?

A. Yes. My recommendation reduces proposed revenues by $53,876 ($3,663,034 - $3,609,158) (I&E Exhibit 3, Sch. 5, p. 2, line 16 col. J and I&E Exhibit 3, Sch. 6, line 16 col. J).

Q. WHAT RATES DID YOU RECOMMEND CHANGING TO ACHIEVE THE APPROXIMATE $998,700 INCREASE DESCRIBED ON PAGE 5 OF CUPA STATEMENT NO. 3?

A. To achieve the approximate $998,700 increase described in CUPA-WW St. No. 3, I recommended two of the rates be increased slightly. First, I recommended the flat monthly rate for Consolidated and Tamiment customers be increase to $79.38 per month (I&E Exhibit No. 3, Sch. 7, p. 1, column G, lines 1,3,4,5,7,8). Second, I recommended the school rate be increased to $1.705 per pupil per month (I&E Exhibit No. 3, Sch. 7, p. 2, column G, line 2).

Q. WHAT WAS THE TOTAL INCREASE AFTER YOUR RATE STRUCTURE RECOMMENDATIONS ARE APPLIED AND YOUR LATE PAYMENT REVENUE IS INCLUDED?

A. The increase was $998,707 and the total proposed revenue is $3,671,044 (I&E Exhibit No. 3, Sch. 7, p. 1, line 14, columns H and J).

Q. DID THE COMPANY ADDRESS YOUR RECOMMENDATION TO ESTABLISH AN AVAILABILITY CHARGE OF $11.00 PER MONTH?

A. Yes. The Company disagreed with my recommendation for several reasons. First, the Company disagrees with my conclusion that the availability charge is too high, and the rate has not been increased for over 10 years. Second, the Company states that the proposed availability charge is based upon cost (CUPA-WW St. No. 4-R, pp. 6-7).

Q. DO YOU AGREE WITH THE COMPANY THAT IT IS REASONABLE TO INCREASE THE AVAILABILITY CHARGE TO $22.91 PER MONTH BECAUSE IT HAS NOT BEEN INCREASED IN OVER TEN YEARS?

A. No. As described above and in my direct testimony I believe an increase of 200.1% when the system average increase is approximately 37.4% is too large and must be reduced to lessen the impact to these customers. The fact that this rate was unchanged for over ten years simply indicates that the revenue from this rate and other rates allowed CUPA to meet its revenue needs over that time. The fact that CUPA proposed no increase to the availability rate for over ten years simply does not support a 200.1% increase in one step for availability customers.

Q. IS THE AVAILABILITY CHARGE SUPPORTED BY THE COST OF SERVICE STUDY AS CLAIMED BY THE COMPANY?

A. No. The Company's functional COSS bases the determination of availability

charges on meters and meter equivalency. Since availability customers don't have meters or produce wastewater, the proper way to determine an availability charge would be to allocate a portion of mains and treatment plant to availability customers. Since the Company failed to do a proper analysis, the Company's availability charge of $22.90 per month is not supported.

Q. DID THE OCA ADDRESS YOUR RECOMMENDATION TO ESTABLISH AN AVAILABILITY CHARGE OF $11.00 PER MONTH?

A. Yes. The OCA is concerned that establishing a uniform rate of $11.00 per will result in a decrease of $2.12 per month for customer in the Consolidated system (OCA St. 1-R, p. 7).

Q. PLEASE ADDRESS THE OCA'S CONCERN REGARDING THE ESTABLISH AN AVAILABILITY CHARGE OF $11.00 PER MONTH?

A. I believe this small decrease of $2.12 per month is necessary for the consolidation of rates and establishing a uniform rate of $11.00 per will be simpler to administer and fair to all availability customers.

Q. DO YOU CONTINUE TO SUPPORT AN AVAILABILITY CHARGE OF $11.00 PER MONTH?

A. Yes. For the reasons stated above and in my direct testimony.

1 **PUBLIC INPUT HEARING AND DEP ISSUES**

2 **Q. AT THE PUBLIC INPUT HEARING, WHAT ISSUES WERE RAISED**
3 **CONCERNING WASTEWATER SERVICE?**

4 A. On June 29, 2021, a telephonic public input hearing was held in which CUPA
5 customers expressed their frustration over the proposed rate increases and quality
6 of service issues (I&E St. No. 3, pp. 22-23).

7

8 **Q. IN ADDITION TO THE PUBLIC INPUT TESTIMONY, HAVE THERE**
9 **BEEN ANY DEP VIOLATIONS?**

10 A. Yes. PA-DEP reports shown in I&E Ex. No. 3, Sch. 10, pp. 1-2 show the types of
11 chemical element violations found in the wastewater of Tamiment from August of
12 2019 to January of 2020. In addition, sewage inspection reports from December 3,
13 2020, and January 4, 2021, listed sanitary system overflow violations at the Penn
14 Estates wastewater facility (I&E Ex. No. 3, Sch. 11, pp. 1-2 and I&E Ex. No. 3,
15 Sch. 12, pp.1-2).

16

17 **Q. BASED UPON PUBLIC INPUT HEARING TESTIMONY AND THE DEP**
18 **REPORTS, WHAT WERE YOUR RECOMMENDATIONS?**

19 A. With respect to grinder pump issues, I recommended that CUPA investigate what
20 pressures currently exist in the system. If the amount of pressure in the system is
21 contributing to the damage of customer grinder pumps, CUPA must take action to

reduce the pressure and mitigate damage to the grinder pumps. I further recommended that CUPA investigate chemical discharges in the wastewater system to determine if that is potentially damaging the grinder pumps. Finally, I recommended that the Company provide a report to the parties within six months of a Commission order reporting its findings on the issues described above. With respect to the DEP issues, I recommended CUPA track and report DEP letters and violations and summarize these in a report one year after the order date in this proceeding and each year thereafter for the next 3 years I&E St. No. 3, pp. 23-24)

Q. WHY DID YOU MAKE THESE RECOMMENDATIONS?

A. The Company is required to provide adequate, safe, and reasonable wastewater service. The issues raised at the public input hearing and the recent DEP reports call into question whether the Company is adhering to this requirement. Reporting its findings with respect to the grinder pump issues and tracking DEP violations will inform the Commission and interested parties about the status of these service issues with the goal of improving service in its territory.

Q. DID THE COMPANY ADDRESS YOUR TESTIMONY CONCERNING THE PUBLIC INPUT TESTIMONY?

A. Not directly. However, the Company appears to disagree with my reporting requirement recommendations concerning the feedback from the public input testimony. CUPA explains its position regarding general water and wastewater

issues and states that they are doing everything possible to resolve customer issues (CUPA W & WW St. No. 7-R, pp. 2-5). For the Tamiment system sewer back flow valves and grinders pumps, the Company reiterated that since those pieces of equipment are attached to the residential service line, the homeowner is responsible for maintaining these items, not CUPA (CUPA W & WW St. No. 7-R, pp. 11-14).

Q. DOES THE COMPANY'S REBUTTAL TESTIMONY ADDRESS ALL OF YOUR CONCERNS EXPRESSED ABOUT THE PUBLIC INPUT TESTIMONY?

A. The Company did respond in detail to the issues raised at the public input hearing; however, given the volume of customer input provided at that hearing I continue to recommend the Company report its findings with respect to customer complaints and service issues to inform the Commission and interested parties about the status of these issues with the goal of improving service in its territory as described in I&E St. No. 3, p. 24. Furthermore, if failure of these items is related to improper system pressures, then CUPA should bear responsibility for the failures.

1 **SCALE BACK**

2 **Q. WHAT SCALE BACK DID YOU RECOMMEND IF THE COMMISSION**
3 **GRANTS LESS THAN THE FULL INCREASE REQUESTED BY THE**
4 **COMPANY?**

5 A. If the Commission grants less than the revised full requested increase of
6 approximately $998,700, I recommended that the proposed rates on I&E Exhibit
7 No. 3, Sch. 7, p. 2, column G lines 1-2 be reduced proportionally to the increase
8 under Column K. The availability charge should also be scaled back so that the
9 percentage increase in the Tamiment system shown on line 9 is equal to the
10 percentage increase for the flat rate Consolidated customers on line 1. The
11 remaining rates on Schedule 7 should be reduced to correspond with the rates on
12 lines 1 and 2.
13

14 **Q. WHY DID YOU RECOMMEND A PROPORTIONAL SCALE BACK?**

15 A. The Company did not provide a class cost-of-service study to analyze the revenue
16 received and expenses incurred to provide service to each class; therefore, a
17 proportional scale back of the flat monthly charge, and the school rate in the
18 Consolidated system is the most reasonable approach to establish rates if the
19 Commission grants less than the full increase. It should be noted that under this
20 scale back the monthly rate in the Tamiment system will be the same as the
21 monthly rate in the Consolidated system although the percentage change will be

1 different because the present rates in the Tamiment system are different (I&E
2 Exhibit No. 3, Sch. 7, p. 2, column G).
3
4 **Q. DID YOU ALSO STATE THAT THE COMPANY DID NOT PROVIDE A**
5 **COST OF SERVICE STUDY (COSS)?**
6 A. Yes (I&E St. No. 3, p. 2). To clarify this statement, my testimony should have
7 stated that the Company did not file a class COSS. This class COSS would have
8 included summary sheets showing the rate of return by class and relative rate of
9 return by class under present and proposed rates that would enable the parties and
10 the Commission to determine a specific scale back by class if the Commission
11 grants less than the full increase.
12
13 **Q. DID THE COMPANY ADDRESS YOUR SCALE BACK**
14 **RECOMMENDATION?**
15 A. Not specifically. However, while the Company and I agree that rates should be
16 consolidated, it appears CUPA expressed a concern about the availability charge
17 being scaled back (CUPA-WW St. No. 4-R, pp. 6-7).
18
19 **Q. SHOULD THE AVAILABILITY CHARGE BE INCLUDED IN THE**
20 **SCALE BACK OF RATES IF THE COMMISSION GRANTS LESS THAN**
21 **THE FULL INCREASE?**
22 A. Yes. Because under my proposal to increase the rates approximately the same

percentage as the system average, it would be reasonable to include the availability charge in the scale back of rates.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
v.	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
and	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

SURREBUTTAL TESTIMONY OF

STACY L. SHERWOOD

ON BEHALF OF THE
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

September 3, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway Suite 300
Columbia, Maryland 21044

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APPENDIX A: SURREBUTTAL SCHEDULES

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Stacy L. Sherwood. I am an Economist with Exeter Associates, Inc. ("Exeter"). Our offices are located at 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter is a firm of consulting economists specializing in issues pertaining to public utilities.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?

A. Yes. I previously submitted direct testimony on behalf of the Pennsylvania Office of Consumer Advocate ("OCA"). My qualifications and experience are set forth in that testimony.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to certain arguments presented in the rebuttal testimonies submitted by Community Utilities of Pennsylvania Inc. ("CUPA" or "Company") for both water and wastewater services. In particular, I am responding to witnesses Perry Brown, David Clark, and LaQuisha Parks related to my direct testimony filed in this case.

Q. PLEASE DISCUSS THE OCA'S REVISED POSITION FOR THIS CASE.

A. As stated below in this testimony, I have accepted some of the positions of CUPA and have detailed my objections or recommendations to others. As a result of the recommendations outlined in this testimony, accompanied by the recommendations of the other OCA witnesses, my revised position is to recommend an overall revenue requirement increase to water customers of $607,708 and to wastewater customers of $682,198, which is reflected on Schedule SLS-1SR and Schedule SLS-4SR, respectively. This recommendation for water customers is $146,211 less than the

increase of $753,939 that CUPA requested in its rebuttal and for wastewater customers is $312,255 less than the increase of $994,453 that CUPA requested in its rebuttal. It should be noted that this recommendation does not take into account the affordability, gradualism/rate shock, and adequacy of service issues highlighted in my direct testimony and that of OCA witness Mierzwa.

II. ACCEPTED ADJUSTMENTS

Q. DID CUPA ACCEPT ANY OF YOUR RECOMMENDED ADJUSTMENTS?

A. Yes. The Company accepted my recommendation to remove the merit increases for vacant positions, in the amount of $1,205 for water and $1,426 for wastewater, from salaries expense. This adjustment is already reflected in my schedule as part of a larger adjustment for the salaries and benefits, which is shown in Schedule SLS-7SR.

Q. DID THE COMPANY ACCEPT ANY ADJUSTMENTS FROM OTHER PARTIES?

A. Yes. The Company accepted the following adjustments, which are reflected in my schedules as well:

- Forfeited discounts to reflect same percentage approved by the Commission (reflected on Schedules SLS-1SR and SLS-4SR);
- Adjust rate base to properly reflect the net book value of Penn Estates meter (reflected on Schedule SLS-3SR); and
- Adjustment to remove Tamiment CWIP – Wastewater (reflected on Schedule SLS-6SR).

III. RATE CASE EXPENSE

Q. DID CUPA ACCEPT YOUR RECOMMENDATION TO NORMALIZE RATHER THAN AMORTIZE THE RATE CASE EXPENSE?

A. Yes. CUPA did accept my recommendation to normalize the rate case expense.

Q. OVER WHAT PERIOD DOES CUPA PROPOSE TO NORMALIZE THE RATE CASE EXPENSE?

A. CUPA proposes to normalize the rate case expense over three years. However, I would like to note that in response to I&E-RE-2 CUPA 2021 Consolidated RC Section 2, Supporting Schedule No. 8, the Company amortized the expense over four years.

Q. DO YOU AGREE WITH CUPA'S POSITION?

A. No, I do not. As noted in my direct testimony, CUPA has historically filed rate cases an average of every 4.6 years. There is Commission precedent supporting the normalization of rate case expense over the average timeframe the utility has historically filed rate cases. If the Company files its next rate case sooner than four years, its historic average will change accordingly. Therefore, I maintain my recommendation that the rate case expenses should be normalized over a period of four years, instead of three, as proposed by CUPA. This is reflected on Schedule SLS-1SR. Additionally, I continue to recommend that CUPA update its actual rate case expense to date as part of its rejoinder testimony so that the final amount to be normalized will reflect primarily actual expenses rather than projected expenses.

IV. SALARIES

Q. WOULD YOU LIKE TO ADDRESS THE RECOMMENDED ADJUSTMENT FOR SALARIES MADE IN YOUR DIRECT TESTIMONY?

A. Yes. After further review of Schedule SLS-7 in my direct testimony, I noted that an incorrect value was reported on line 9, FPFTY Salaries Per Company. Originally the value on line 9 was $1,053,335; however, it should have been $951,113. This has been corrected and reflected on Schedule SLS-7SR. As a result of that correction, my direct testimony position on revenue requirements changed to $593,897 from $547,120 for water and to $701,786 from $645,820 for wastewater.

Q. DID CUPA ACCEPT YOUR PROPOSED ADJUSTMENT TO ONLY INCREASE SALARIES BY 3 PERCENT IN THE FPFTY?

A. No. The Company claims that the approach is not reasonable because there is no data to support my position. Furthermore, the Company provided information showing that over the last four years, the actual annual merit increases exceeded the 3 percent that I have recommended be utilized.

Q. DO YOU ACCEPT THE COMPANY'S EVIDENCE TO SUPPORT UTILIZING A 4 PERCENT MERIT INCREASE?

A. No, I do not. As noted in the response, I&E-RE-6-D, the Company aims to maintain salary increases of 3 to 4 percent. Additionally, the Company stated that the variance from that policy is due to exceptions for merit increases and promotions. In prior rate cases, the 3 percent salary increase, per the Company's policy, was utilized to determine salary increases. Merit increases and promotions are based on a manager's discretion and therefore, are not known and measurable and should not be accounted for in the FPFTY. Furthermore, CUPA recognized that overtime can contribute to higher salary expenses. As such, it is possible that the higher percentage increases over the past 4 years could be related to overtime or managerial decisions.

The Commission should adopt a conservative approach of a 3 percent salary increase, which has historically been allowed for CUPA, especially given the current

financial hardships experienced by ratepayers due to the COVID-19 pandemic. Additionally, the historical increases above 3 percent were at the discretion of the Company despite knowing what had been authorized as part of its approved revenue requirement. As such, I maintain my adjustment to salaries and benefits stated in my direct testimony.

V. ENGINEERING EXPENSE

Q. DID CUPA ACCEPT YOUR ADJUSTMENT TO ENGINEERING EXPENSE?

A. Not entirely. In rebuttal, Mr. Clark agreed to utilize the same methodology to normalize expenses as I proposed, with irregular expenses allocated over five years. However, Mr. Clark indicated that a two-year average, instead of a three-year average as I proposed, should be used for engineering expense. Mr. Clark stated that a two-year average would more reasonably represent ongoing annual expenses as it allows for the accurate accounting of the Tamiment acquisition.

Q. WHAT IS THE COMPANY'S REBUTTAL POSITION FOR ENEGINEERING EXPENSE?

A. Mr. Clark stated that the Company would not object to normalizing irregular expenses over five years and utilizing a two-year average (2019 and 2020) for ongoing-average expenses. Utilizing this methodology, the Company adjusted the Engineering Expense by $1,795 for water and by $2,126 for wastewater.

Q. DO YOU AGREE WITH MR. CLARK'S COMPROMISE?

A. Yes. I accept the Company's proposal to utilize a two-year average for ongoing annual expenses as a reasonable means to reflect expenses related to the Tamiment acquisition. The adjustment is reflected in Schedules SLS-1SR and SLS-4SR.

VI. CHEMICAL EXPENSE

Q. DID CUPA ACCEPT YOUR ADJUSTMENT TO CHEMICAL EXPENSE?

A. No. First, Mr. Clark rejected my adjustment to Chemical Expense because it was based upon the normalization of historical data, which "the Company does not believe…is consistent with the purpose of a fully projected future test year."[1] Second, Mr. Clark noted that I used the incorrect historical cost for the HTY.

Q. DO YOU AGREE WITH MR. CLARK'S ARGUMENT?

A. First, I do accept that the incorrect expense was used to represent the HTY expense. However, while I recognize that error, I do not agree with the Company's argument that normalizing expenses when utilizing a FPFTY is not appropriate. Per *A Guide to Utility Ratemaking*, "historical accounting data is annualized and normalized in a rate case to more accurately forecast the future."[2] Additionally, "Historic data is still required to be submitted to validate the fully projected future test year."[3] Through interrogatories I&E-RE-12-D and OCA-II-8, parties in the case sought to obtain information supporting the claimed 45% increase in chemical expenses over HTY expense levels. However, the Company did not provide any evidence to support cost increases or an increase in chemicals. Rather than providing recent invoices, the Company relies on its "estimated chemical costs" that do not have any supporting documentation.[4] Furthermore, the Company states in response to I&E-RE-12-D that it forecasts chemical costs based upon historical levels of chemical costs. This suggests that the Company agrees with the methodology utilized for my recommended adjustment.

[1] Rebuttal Testimony of David Clark, p 9, lines 8-9.
[2] "A Guide to Utility Ratemaking," James H. Cawley and Norman J. Kennard, 2018 Edition, https://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf, p. 83.
[3] Ibid, p. 88.
[4] Company response to I&E-RE-12-D.

Q. PLEASE DETAIL YOUR SURREBUTTAL POSITION ADJUSTMENT FOR CHEMICAL EXPENSE.

A. The onus to support the FPFTY claim is on the Company. In this instance, the Company has not provided supporting documentation for its proposed level of increase in chemical expense. Therefore, I maintain that the chemical expense should be based upon the three-year historical average of chemicals.

Due to the variance in chemical expenses from year to year, utilizing the average does take into account the acquisition of Tamiment, as Other Chemical and Odor chemical expenses in the HTY are lower than those experienced in other years observed.

In recognition that the input for the HTY chemical expense that I used in direct testimony was not correct, I have updated my adjustment for Chemical expense to reflect the correct amount for HTY, as shown in Schedules SLS-1SR, SLS-4SR, and SLS-7SR. As a result, my recommended Chemical expense adjustment matches the adjustment provided by I&E witness Walker.

VII. TESTING, METER READING, AND MISCELLANEOUS EXPENSE

Q. DID CUPA ACCEPT YOUR RECOMMENDED ADJUSTMENT TO TESTING, METER READING, AND MISCELLANEOUS EXPENSE?

A. No. Mr. Clark indicated in his rebuttal testimony that utilizing historical costs is a "backward-looking approach, which will not allow the utility to recover its costs and is inconsistent with the General Assembly's future test year concept."[5] Additionally, Mr. Clark argued that the 3-year normalization of historical cost does not consider the Tamiment acquisition.

[5] Rebuttal Testimony of David Clark, p 13, lines 18-20.

Q. DO YOU AGREE WITH THE COMPANY'S REBUTTAL POSITION?

A. No, I do not. As noted in the prior section of this testimony, *A Guide to Utility Ratemaking* highlights the importance that historical data plays in the development of the FPFTY. Furthermore, the onus is on the Company to provide supporting evidence that the costs will increase and that the increases are based on known and measurable changes in expenses; however, the Company has not provided support for the increase in expenses from historical levels, such as Test – Sewer expense, which it seeks to increase from $12,201 in the HTY to $43,519 in the FPFTY. Without evidence to support the increase in expense claims for the FPFTY from historical levels, at the very least from the HTY which does account for the Tamiment acquisition, the increase should not be granted. Therefore, I maintain the adjustment for Testing, Meter Reading, and Miscellaneous expense as detailed in my direct testimony, as shown on Schedule SLS-10.

VIII. MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE

Q. DID CUPA ADDRESS YOUR CONCERNS ABOUT POTENTIAL DOUBLE COUNTING OF SLUDGE REMOVAL IN ITS MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE IN REBUTTAL?

A. Yes. In the Rebuttal Testimony of David Clark (Wastewater), it was explained that while the sludge hauling expense was inadvertently included as part of the Materials, Supplies, and Other Maintenance expense, it was not doubled counted.

Q. DO YOU MAINTAIN YOUR RECOMMENDED ADJUSTMENT FOR THE MATERIALS, SUPPLIES, AND OTHER MAINTENANCE EXPENSE MADE IN YOUR DIRECT TESTIMONY?

A. No. As the Company has demonstrated that it is a valid expense, which is not being double counted under another expense category, I have removed the adjustment to this account in the amount of $30,409. As noted on Schedule SLS-4S, no adjustment is made to this Materials, Supplies, and Other Maintenance expense.

IV. RATE BASE

Q. DID CUPA ACCEPT YOUR ADJUSTMENTS TO REDUCE THE UTILITY PLANT AND ASSOCIATED CHANGES TO ACCUMULATED DEPRECIATION AND DEPRECIATION ADJUSTMENT?

A. No. The Company argues in Mr. Clark's rebuttal testimony that the level of capital is based on actual historical average spending and that CUPA "has every intention of investing this level of capital spending within the rate year."[6]

Q. DO YOU AGREE WITH MR. CLARK'S REBUTTAL POSITION ON YOUR RATE BASE ADJUSTMENT?

A. No. The Company mischaracterized my adjustment to rate base as based on personal opinion rather than specific statutory requirements and ratemaking practice. As stated in 66 Pa. C.S. § 315(e), in using a FPFTY the utility must provide "appropriate data evidencing the accuracy of the estimates contained in the future test year or a fully projected test year." The Company has failed to provide evidence to support capital improvements that will be added to rate base, nor did it provide start or end dates for the capital improvements. While historically the Company may have added to the rate base in these accounts, CUPA does not know what capital improvements will be made going forward. Had the Company been able to detail the capital projects that will result in the rate base increasing, it may have been reasonable to include these increases to

[6] Rebuttal Testimony of David Clark, p 4, lines 2-3.

rate base. However, the proposed changes to the rate base in the FTY and FPFTY identified in my direst testimony are not known and measurable. The Company is responsible for providing the supporting evidence for its claim to increase rate base and in the instances detailed in my direct testimony, has not done so. As such, ratepayers should not be responsible for a potentially inflated rate base to increase the Company's return when there is the real possibility that such improvements will not occur.

Q. PLEASE DETAIL YOUR SURREBUTTAL POSITION ADJUSTMENTS TO RATE BASE.

A. I propose no adjustments to my direct testimony position for rate base, beyond that of the accepted adjustment for the Penn Estates Meters that I adopted as part of my Schedule SLS-3SR.

V. CUSTOMER SERVICE

Q. IN DIRECT TESTIMONY, YOU RECOMMENDED THAT CUPA SHOULD MAKE CHANGES TO ENSURE THAT CUSTOMERS CAN EASILY REACH THE COMPANY AND GET ANSWERS TO THEIR QUESTIONS BY PHONE. HOW DID CUPA RESPOND?

A. In CUPA Statement No. 8-R Ms. Parks provided information about the Company's efforts to improve customers' service in 2020 and 2021. Of note, now CUPA customers are directed to a customer service representative responsible for customers in Pennsylvania; prior to that change, the customer might have been directed to a representative located in any Corix location. As part of its next rate case filing, I recommend that CUPA provide information regarding the Corix call center

performance to Pennsylvania customers, similar to the metrics provided in the rebuttal testimony.

Q. PLEASE DETAIL YOUR SURREBUTTAL SCEHDULES.

A. I have included Schedules SLS-1S through SLS-6S and SLS-11S through SLS-14S. Each of those details the following:

- Schedule SLS-1SR: Summary of Operating Income (Water);
- Schedule SLS-2SR: Summary of Operating Income (Water);
- Schedule SLS-3SR: Adjustment of Rate Base (Water);
- Schedule SLS-4SR: Summary of Operating Income (Wastewater);
- Schedule SLS-5SR: Summary of Operating Income (Wastewater);
- Schedule SLS-6SR: Adjustment of Rate Base (Wastewater);
- Schedule SLS-7SR: Adjustment to Salaries & Wages – Employees and Employee Pension and Benefits
- Schedule SLS-8SR: Adjustment for Chemical Expense
- Schedule SLS-11SR: Adjustments to Taxes Other than Income;
- Schedule SLS-12SR: Cash Working Capital Adjustment;
- Schedule SLS-13SR: Adjustment to Allowance for Uncollectible Accounts; and
- Schedule SLS-14SR: Adjustment to Federal and State Taxes.

Q. DOES THIS COMPLETE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

APPENDIX A

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
	)	
v.	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WATER DIVISION	)	**Docket Nos. R-2021-3025206 and R-2021-3025207**
	)	
and	)	
	)	
COMMUNITY UTILITIES OF PENNSYLVANIA INC. – WASTEWATER DIVISION	)	

SCHEDULES ACCOMPANYING THE

SURREBUTTAL TESTIMONY

OF

STACY L. SHERWOOD

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

September 3, 2021

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Volumetric Revenue					
3	Residential	$ 1,312,552		$ 1,312,552		$ 1,312,552
4	Commercial	18,296		18,296		18,296
5	Flat/Base Rate Revenue					
6	Residential	687,585		687,585		687,585
7	Commercial	17,562		17,562		17,562
8	Availability	35,394		35,394		35,394
9	Fire Hydrant	24,831		24,831		24,831
10	Other Operating Revenues					
11	Forfeited Discounts	(1,407)	$ 3,710	2,303		2,303
12	Miscellaneous Service Revenues	4,905	(1,095)	3,810		3,810
13	Purchased Services	-	-	-		-
14	Accruals	(56,290)	56,290	-		-
15	Gross Operating Revenues	2,043,428		2,102,333	607,708	2,710,041
16	Allowance for Uncollectible Accounts	(17,369) (1)		(17,369)	(2,619)	(19,988)
17	Net Operating Revenues	$ 2,026,059	$ 58,905	$ 2,084,964	$ 610,327	$ 2,695,291
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	396,201	(7,497)	388,704		388,704
21	Employee Pensions & Benefits	111,990	(6,359)	105,631		105,631
22	Purchased Power	106,110		106,110		106,110
23	Purchased Water	217,663		217,663		217,663
24	Chemicals	113,899	(31,921)	81,978		81,978
25	Materials, Supplier, and Other Maintenance Expenses	116,943		116,943		116,943
26	Engineering Fees	9,953	(1,795)	8,158		8,158
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	3,815		3,815		3,815
29	Contractual Services - Other	272,323		272,323		272,323
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	22,580		22,580		22,580
32	Insurance - Other	50,734		50,734		50,734
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	45,196		45,196		45,196
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	36,709		36,709		36,709
36	Regulatory Commission Expenses - Other	-		-		-
37	Testing, Meter Reading, and Miscellaneous Expenses	43,343	6,495	49,838		49,838
38	Total Operating Revenue Deductions	$ 1,547,459		$ 1,506,383		$ 1,506,383
39						
40	Operating Income Before Income Taxes	478,600		578,581		1,188,908
41						
42	Operating Expenses					
43	Depreciation	375,543		375,543		375,543
44	Amortization of CIAC	(30,502)		(30,502)		(30,502)
45	Amortization of PAA	(36,069)		(36,069)		(36,069)
46	Taxes Other than Income	79,357	(6,799)	72,558		72,558
47		388,329		381,530		381,530
48	Income Taxes					
49	Federal Income Tax	119,283	(12,122)	107,161		107,161
50	State Income Tax	63,043	(6,407)	56,636		56,636
51		182,326		163,797		163,797
52						
53	Net Operating Income	$ (92,055)	$ (7,499)	$ 33,254	$ 610,327	$ 643,581
54						
55	Rate Base	$ 9,076,056	(11,532)	$ 9,064,524		$ 9,064,524
56						
57	Return On Rate Base	-1.01%		0.37%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.			Amount	
1	Rate Base	$	9,064,524	(1)
2	Required Rate of Return		7.10%	(2)
3				
4	Net Operating Income Required	$	643,581	
5	Net Operating Income at Present Rates		35,873	
6				
7	Required Change in Company Revenue	$	607,708	

Notes:

(1) Schedule SLS-3SR
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Water Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,084,964	$ 1,547,459	308,972	$ 79,357	$ 149,176
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,619)				
5	Salaries & Wages		(7,497)			
6	Employee Pension and Benefits		(6,359)			
7	Engineering Fees		(3,057)			
8	Testing, Meter Reading, and Miscellaneous		6,495			
9	Payroll Tax				(6,799)	
10	Chemicals		(31,921)			
11	Total OCA Adjustments	$ (2,619)	$ (42,338)	$ -	$ (6,799)	
12						
13	Total Adjusted Income Before Income Taxes	$ 2,082,345	$ 1,505,121	$ 308,972	$ 72,558	$ 195,695

Community Utilities of Pennsylvania Inc. - Water Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022	OCA Recommended Rate Base	OCA Adjustment for Rate Base
1	Original Cost of Utility Plant in Service	$ 13,579,565		$ 13,579,565
2	Less: Accumulated Depreciation	4,948,852		4,948,852
3	Subtotal	8,630,713	-	8,630,713
4				
5	Deduct			
6	Contributions in Aid of Construction	1,234,996		1,234,996
8	Net Plant Acquisition Adjustment	719,891		719,891
9	Net Utility Plant	6,675,826	-	6,675,826
10				
11	Less			
12	Customer Deposits	1,442		1,442
13	Accumulated Deferred Income Taxes	454,825		454,825
14				
15	Add			
16	Proforma Level of Plant	2,580,058		2,580,058
17	Deferred Charges	75,983		75,983
18	Cash Working Capital	200,456	(11,532)	188,924 (1)
19				
20	Total Rate Base	$ 9,076,056	$ (11,532)	$ 9,064,524

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12SR

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	**Operating Revenues**					
2	Flat/Base Rate Revenue					
3	Residential	$ 2,288,594		$ 2,288,594		$ 2,288,594
4	School	16,922		16,922		16,922
5	Availability	37,170		37,170		37,170
6	Commercial	13,857		13,857		13,857
7	Volumetric Revenue					
8	Residential	304,822		304,822		304,822
9	Commercial	3,027		3,027		3,027
10	Other Operating Revenues					
11	Forfeited Discounts	(1,789)	$ 5,502	3,713		3,713
12	Miscellaneous Service Revenues	1,180	$ (507)	673		673
13	Purchased Services	-		-		-
14	Accruals	(71,652)	$ 71,652	-		-
15	Gross Operating Revenues	2,592,131		2,668,778	682,198	3,350,976
16	Allowance for Uncollectible Accounts	(26,658) (1)		(26,658)	(2,688)	(29,346)
17	Net Operating Revenues	$ 2,565,473	$ -	$ 2,642,120	$ 684,886	$ 3,327,006
18						
19	**Operating Revenue Deductions**					
20	Salaries & Wages - Employees	$ 469,108	(8,875)	$ 460,233		$ 460,233
21	Employee Pensions & Benefits	132,598	(7,528)	125,070		125,070
22	Sledge Hauling & Sewer Rodding	226,788		226,788		226,788
23	Purchased Power	125,637		125,637		125,637
24	Chemicals	129,205	(51,205)	78,000		78,000
25	Materials, Supplier, and Other Maintenance Expenses	134,556		104,147		104,147
26	Engineering Fees	11,784	(2,126)	9,658		9,658
27	Contractual Services - Accounting	-		0		0
28	Contractual Services - Legal	4,517		4,517		4,517
29	Contractual Services - Other	322,435		322,435		322,435
30	Rental of Building/Real Property	-		0		0
31	Transportation Expenses	26,736		26,736		26,736
32	Insurance - Other	60,070		60,070		60,070
33	Advertising Expense	-		0		0
34	Office Utilities, Suppliers, & Other Office Expenses	53,513		53,513		53,513
35	Regulatory Commission Expenses - Normalization of Rate Case Expense	43,464		43,464		43,464
36	Regulatory Commission Expenses - Other	-		0		0
37	Testing, Meter Reading, and Miscellaneous Expenses	65,303	(18,551)	46,752		46,752
38	Total Operating Revenue Deductions	1,805,714		1,687,020		$ 1,687,020
39						
40	Operating Income Before Income Taxes	759,759		955,100		1,639,986
41	.					
42	Operating Expenses					
43	Depreciation	665,056	(23,640)	641,416		641,416
44	Amortization of PAA	(58,573)		(58,573)		(58,573)
45	Taxes Other Than Income Taxes	101,940 (2)	(1,315)	100,625		100,625
46	Amortization of CIAC	(86,762)		(86,762)		(86,762)
47		621,661		596,706		596,706
48	Income Taxes					
49	Federal Income Tax	174,497	(43,783)	130,714		130,714
50	State Income Tax	92,224	(23,140)	69,084		69,084
51		266,721		199,798		199,798
52						
53	Net Operating Income	$ (128,623)	$ (88,285)	$ 158,596	$ 684,886	$ 843,482
54						
55	Rate Base	$ 12,862,170	(982,139)	$ 11,880,031		$ 11,880,031
56						
57	Return On Rate Base	-1.00%		1.33%		7.10%

Notes:

(1) Reflects the Allowance for Uncollectible Accounts using the Company's Percentage of Uncollectible at Present Rates
(2) Supporting Schedule No. 5

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	
1	Rate Base	$ 11,880,031	(1)
2	Required Rate of Return	7.10%	(2)
3			
4	Net Operating Income Required	$ 843,482	
5	Net Operating Income at Present Rates	161,284	
6			
7	Required Change in Company Revenue	$ 682,198	

Notes:

(1) Schedule SLS-6SR
(2) Calculated by OCA Rate of Return Witness Noah Eastman

Community Utilities of Pennsylvania Inc. - Wastewater Division

Summary of Operating Income
For the Rate Year Ending December 31, 2022

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Income Taxes
1	Amount per Company	$ 2,642,120	$ 1,805,714	519,721	$ 101,940	$ 214,745
2						
3	OCA Adjustments:					
4	Uncollectibles	(2,688)				
5	Salaries & Wages		(8,875)			
6	Employee Pension and Benefits		(7,528)			
7	Engineering Fees		(3,620)			
8	Materials, Supplier, and Other Maintenance Expenses		0			
9	Testing, Meter Reading, and Miscellaneous		(18,551)			
10	Payroll Tax				(1,315)	
11	Chemicals		(51,205)			
12	Total OCA Adjustments	$ (2,688)	$ (89,779)	$ -	$ (1,315)	$ -
13						
14	Total Adjusted Income Before Income Taxes	$ 2,639,432	$ 1,715,935	$ 519,721	$ 100,625	$ 303,150

Community Utilities of Pennsylvania Inc. - Wastewater Division

Adjustment of Rate Base
For the Rate Year Ending December 31, 2022

Line No.		Company Rate Base as of 12/31/2022	OCA Adjustment for Rate Base	OCA Recommended Rate Base	
1	Original Cost of Utility Plant in Service	$ 21,361,044	$ (987,784)	$ 20,373,260	
2	Less: Accumulated Depreciation	10,455,892	34,458	(10,421,434)	
3	Subtotal	10,905,152		9,951,826	
4					
5	Deduct				
6	Contributions in Aid of Construction	1,775,060		1,775,060	
8	Net Plant Acquisition Adjustment	1,057,608		1,057,608	
9	Net Utility Plant	8,072,484	-	7,119,158	
10					
11	Less				
12	Customer Deposits	1,825		1,825	
13	Accumulated Deferred Income Taxes	774,535		774,535	
14					
15	Add				
16	Proforma Level of Plant	5,272,944		5,272,944	
17	Deferred Charges	66,921		66,921	
18	Cash Working Capital	226,181	(28,813)	197,368	(1)
19					
20	Total Rate Base	$ 12,862,170	$ (982,139)	$ 11,880,031	

Notes:

(1) Reflects adjustment to cash working capital shown in Schedule SLS-12SR

Community Utilities of Pennsylvania Inc.

Adjustment to Salarires & Wages - Employees and Employee Pensions and Benefits
For the Rate Year Ending December 31, 2022

Line No.					Water Allocation (45.79%)	Wastewater Allocation (54.21%)
1	**Salaries & Wages - Employees**					
2	FTY Salary	$	909,431	(1)		
3	Less: Vacant Positions		65,755	(2)		
4	Salary Subject to Annual Increase		843,676			
5	3% Increase Annual Increase		25,310			
6	Salary with Increase		868,986			
7	Add: Vacant Positions		65,755			
8	FPFTY Salaries Per OCA		934,741			
9	FPFTY Salaries Per Company		951,113	(1)		
10	Variance	$	(16,372)		$ (7,497)	$ (8,875)
11						
12	**Payroll Tax**					
13	FPFTY Salary Increase	$	25,310			
14	FICA Adjustment (7.65%)		1,936			
15	Payroll Tax Adjustment FTY to FPFTY	$	1,936			
16	FTY Payroll Tax		68,265			
17	FPFTY Payroll Tax Per OCA	$	70,201			
18	FPFTY Payroll Tax Per Company	$	68,820	(3)		
19	Variance	$	1,381		$ 632	$ 749
20						
21	**Employee Pension and Benefits**					
22	FPFTY Salary Increase	$	25,310			
23	Non-Elective 401k Contribution (3%)	$	759			
24	Company 401k Match (4%)		1,012			
25	Pension and Benefits Adjustment FTY to FPFTY	$	1,772			
26	FTY Pension and Benefits		228,930	(1)		
27	FPFTY Pension and Benefits Per OCA	$	230,702			
28	FPFTY Pension and Benefits Per Company		244,588	(1)		
29	Variance	$	(13,886)		$ (6,359)	$ (7,528)

Notes:

(1) Direct Testimony of Perry Brown Schedule WP-PB-02 Salaries and Wages Forecast for Water and Wastewater
(2) Company Response to I&E-RE-4-D Salary & Benefits 2021 & 2022
(3) Does not match the Company's Response to I&E-RE-4-D Salary & Benefits 2021 & 2022 calculation of payroll tax, which results in an increase

Community Utilities of Pennsylvania Inc.

Adjustment for Chemical Expense
For the Rate Year Ending December 31, 2022

Line No.		5480 Chlorine		5490 Other Treatment Chemicals		5485 Odor Control Chemicals		Total Annual Chemical Expense
1	2018	$ 7,256	(1)	$ 153,460	(1)	$ 2,692	(1)	$ 163,408
2	2019	12,311	(1)	105,772	(1)	7,690	(1)	125,773
3	2020	18,488	(2)	145,495	(2)	4,200	(2)	168,183
4	3-year Average	$ 12,685		$ 134,909		$ 4,861		$ 152,455
5								
6								
7				Water			Wastewater	
8		**Total 5480 Chlorine Expense**		**ERC Allocation Weight**		**Total 5480 Chlorine Expense for Water**	**ERC Allocation Weight**	**Total 5480 Chlorine Expense for Wastewater**
9	Amount Per Company	$ 12,685		100.00%		$ 12,685	0.00%	$ -
10	Amount Per OCA	16,448		100.00%		16,448	0.00%	0
11	OCA Adjustment					3,763		0
8		**Total 5485 Odor Control Expense**		**ERC Allocation Weight**		**Total 5485 Odor Control Expense for Water**	**ERC Allocation Weight**	**Total 5485 Odor Control Expense for Wastewater**
9	Amount Per Company	$ 13,820		0.00%		$ -	100.00%	$ 13,820
10	Amount Per OCA	4,861		0.00%		0	100.00%	4,861
11	OCA Adjustment					0		(8,959)
8		**Total Chemicals 5490 Other Treatment Chemicals**		**ERC Allocation Weight**		**Total 5490 Other Treatment Chemicals Expense for Water**	**ERC Allocation Weight**	**Total 5490 Other Treatment Chemicals Expense for Wastewater**
9	Amount Per Company	$ 212,839		45.79%		$ 97,459	54.21%	$ 115,380
10	Amount Per OCA	134,909		45.79%		61,775	54.21%	73,134
11	OCA Adjustment					(35,684)		(42,246)
	Total OCA Adjustment					$ (31,921)		$ (51,205)

Notes:

(1) Per the Company's response to OCA Set II-8 Chemical Expense 2021 & 2022 workbook
(2) Per the Company's repsonse to OCA SetI II-8 Chemical Expense HTY

Community Utilities of Pennsylvania Inc.

Adjustments to Taxes Other Than Income
For the Rate Year Ending December 31, 2022

Line No.		Amount	Rate	Amount Per OCA
1	**Water**			
2	Utility Commission Tax	$ 2,695,291	0.66%	$ 17,789
3	Real Estate Tax	16,159,623	0.14%	22,623
4	Payroll Taxes			32,145 (1)
5	Total			$ 72,558
6				
7				
8	**Wastewater**			
9	Utility Commission Tax	$ 3,327,006	0.66%	$ 21,958
10	Real Estate Tax	27,073,908	0.15%	40,611
11	Payroll Taxes			38,056 (1)
12	Total			$ 100,625

Notes

(1) Calculated on Schedule SLS-7SR line 18 multiplied by water and wastewater allocation ratios

Docket Nos. R-2021-305207
R-2021-305206
Schedule SLS-12SR
September 3, 2021

Community Utilities of Pennsylvania Inc.

Adjustments to Cash Working Capital
For the Rate Year Ending December 31, 2022

Line No.			Amount Per OCA
1	**Water**		
2	Maintenance and General Expenses	$	1,506,383
3	Taxes Other Than Income		72,558
4	Total	$	1,578,941
5			
6	Total Cash Working Capital	$	197,368
7			
8	**Wastewater**		
9	Maintenance and General Expenses	$	1,687,020
10	Taxes Other Than Income		100,625
11	Total	$	1,787,645
12			
13	Total Cash Working Capital	$	223,456

Community Utilities of Pennsylvania Inc.

Adjustment to Allowance for Uncollectible Accounts
For the Rate Year Ending December 31, 2022

Line No.		Water				
		Amount Per Present Rates		Amount Per OCA		OCA Adjustment
1						
2						
3	Revenue	$ 2,043,428	(1)	$ 2,710,041	(2)	
4	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)	
5	Allowance for Uncollectible Accounts	$ (17,165)		$ (19,783)		$ (2,619)
6						
7		**Wastewater**				
8		Amount Per Present Rates		Amount Per OCA		OCA Adjustment
9						
10	Revenue	$ 2,592,131	(1)	$ 3,350,976	(4)	
11	Percent of Uncollectible Revenue	-0.84%	(1)	-0.73%	(3)	
12	Allowance for Uncollectible Accounts	$ (21,774)		$ (24,462)		$ (2,688)

Notes:

(1) Direct Testimony of Perry Brown, Exhibit CUPAW EX PAB-1 p 2-3
(2) Schedule SLS-1SR
(3) Direct Testimony of Perry Brown, page 11, line 8
(4) Schedule SLS-4SR

Community Utilities of Pennsylvania Inc.

Adjustment to Federal and State Taxes
For the Rate Year Ending December 31, 2022

Line No.		Water	Wastewater
1	Total Revenue	$ 2,695,291	$ 3,327,006
2	Less:		
3	Operating Expenses	1,506,383	1,687,020
4	Depreciation and Amortization	308,972	496,081
5	Taxes Other Than Income	72,558	100,625
6	Interest Expense	240,451	351,748
7	Taxable Income	$ 566,927	$ 691,532
8			
9	**State Taxes**		
10	Taxable Income	566,927	691,532
11	State Tax Rate	9.99%	9.99%
12	FPFTY State Taxes	$ 56,636	$ 69,084
13			
14	**Federal Taxes**		
15	Taxable Income	$ 566,927	$ 691,532
16	Less: State Taxes	56,636	69,084
17	Federal Taxable Income	$ 510,291	$ 622,448
18	Federal Tax Rate	21%	21%
19	FPFTY Federal Taxes	$ 107,161	$ 130,714

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Stacy L. Sherwood, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 1SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021 Signature: _____
*316721 Stacy L. Sherwood

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 2SR

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission v. Community Utilities of Pennsylvania, Inc.	Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

SURREBUTTAL TESTIMONY

OF

NOAH D. EASTMAN

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

September 3, 2021

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Introduction

Q. Please state your name, business address and occupation.

A. My name is Noah D. Eastman. My business address is 555 Walnut Street, Forum Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate (OCA).

Q. Are you the same Noah D. Eastman who filed Direct Testimony in this proceeding identified as OCA Statement 2?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. My surrebuttal testimony is in response to the rebuttal testimony of Community Utilities of Pennsylvania (CUPA) witness Dylan D'Ascendis. To the extent that the Company's witness has provided rebuttal to a position that I took in my direct testimony but did not address in this surrebuttal testimony, it should not be construed that I agree with the Company.

Q. How is your Surrebuttal Testimony organized?

A. As this testimony is a response to Mr. D'Ascendis, I have organized my surrebuttal similarly to his. My Surrebuttal Testimony addresses the following areas:

- Discounted Cash Flow (DCF) Issues
- Capital Asset Pricing Model (CAPM) Issues
- My rejection of Mr. D'Ascendis' "Size Adjustment"

<u>Discounted Cash Flow Issues</u>

Q. What issues did Mr. D'Ascendis identify as problematic with your Direct Testimony regarding application of your DCF Model?

A. Mr. D'Ascendis' main issue is my reliance on the DCF as the basis for my equity return estimate, with the basis of his argument formed on the market to book ratio of the water proxy groups.

Q. Has your opinion changed as to your reliance on the DCF model with other models as a check to the reasonableness of the DCF indicated return on equity?

A. No, it has not.

Mr. D'Ascendis quotes the assertions of Roger A. Morin, and others, that it is best to use multiple methods in estimating the return on equity in calculating the rate of return because it makes use of more information.[1] This assertion is not necessarily incorrect, and to say that I did not consider the CAPM in my analysis would be a mischaracterization. The CAPM is used as a check on reasonableness of the DCF, and in combination with the historical returns earned by Pennsylvania water utilities, I deemed my findings to support the reliance on my lower 9.34% return on equity using analyst estimates. Additionally, it goes against Pennsylvania Public Utility Commission (PUC) precedent to give equal weight to the CAPM and any other models.

[1] CUPA Statement No. 5-R, pp. 7-9

The DCF model has been the basis of return on equity calculations by the PUC, and as noted in my direct testimony, has been confirmed by the commission in multiple cases.[2] To keep with current PUC precedent, the DCF model should still be the basis for return on equity estimation, with other models used as a check on the reasonableness.

Q. On page 7 of his Rebuttal Testimony, Mr. D'Ascendis states that all models should be given weight in calculation of the return on equity because the DCF tends to "mis-specify the investor-required return when market to-book ("M/B") ratios are not at unity (i.e., 1.0)." Do you agree with this position?

A. No. The most glaring issue with his logic is that it ignores the Efficient Market Hypothesis.[3] Investors are aware of the dynamics of regulated utilities, and how rates are and have been set for decades. Investors have the knowledge that nearly all utilities have their rates set based on the book value of their assets (i.e., rate base and capital structure), and this knowledge is reflected in the prices that investors are willing to pay for stocks. The analysts who attempt to forecast growth also have the knowledge of how rates are set in the regulated utility industry, and absolutely take the market to book ratio into account when they forecast. As such, these dynamics are represented in the DCF cost rates.

Also, the DCF method is merely a method to calculate the return on equity that the utility should have the opportunity to earn. Using market premiums with equal weighting of historic and forecasted premiums, as Mr. D'Ascendis did, the CAPM is just another

[2] OCA Statement 2, p. 7

[3] Fama, Euguene F. "Efficient Capital Markets: A review of Theory and Empirical Work", *The Journal of Finance,* Vol. 25, No. 2. (May 1970), pp. 383-417.

method of estimating the return on equity with the outcome being slightly higher due to different inputs. The main issue Mr. D'Ascendis seems to have with the use of the DCF is that its estimate is too low, and thus would make the returns too low in reference to the market value of the equity.[4] But, as stated above, investors are aware of the difference in market and book capitalization, and the effect that it has rate setting.

<u>Capital Asset Pricing Model ("CAPM") Issues</u>

Q. What issues did Mr. D'Ascendis have with your calculation of the CAPM in your Direct Testimony?

A. Mr. D'Ascendis disagreed with my use of current interest rates in my CAPM analysis and my use of the geometric mean returns and "expected returns from investment houses" in my calculation of the market risk premium.

Q. What issue did Mr. D'Ascendis take with your use of current interest rates?

A. Mr. D'Ascendis believes that my use of a 6-month average of daily rates on 30-year Treasury Bonds is inaccurate because it (1) is not forward looking and as such does not consider investors' expectations and (2) does not provide any more accuracy.

Q. Do you agree with Mr. D'Ascendis criticisms?

A. I do not. Mr. D'Ascendis is correct that my use of an average of daily rates is not forward looking, and they are that way for reasons discussed in my Direct Testimony and others I will lay out here.

[4] CUPA Statement No. 5-R, p. 13 & Schedule DWD-2R

As stated in my Direct Testimony, rate forecasts have been very wrong for more than a decade. Evidence confirming this is addressed in my OCA Statement 2 (pp. 14-15). While I do agree that investors likely use Blue Chip Financial Forecasts in their investment decisions, I also believe, as the Efficient Market Hypothesis would indicate, that those forecasts are considered in the current rates of 30-year treasury bonds. Those considerations provide upward or downward movement in current rates, and as they are adjusted over time investors will continue to reassess. However, giving full weight to projected rates is nearly guaranteed to miscalculate the risk-free rate. This results in setting a rate of return based on speculative rates that (1) do not exist today, (2) may never occur, and (3) are almost always wrong and that difference is nearly always <u>in one direction (upward).</u>

Q. Do you agree with Mr. D'Ascendis' critique of your use of the geometric mean in calculating the historical growth rate of the S&P 500?

A. No. On page 10 and 11 of OCA Statement 2, I laid out the differences in the arithmetic and geometric mean. Mr. D'Ascendis argues that because the geometric mean only considers the beginning value, ending value, and number of periods, that the geometric mean does not adequately reflect risk and volatility. This misrepresents the value of the geometric mean, as the geometric mean provides the real return on investments over time since it accounts for the ability to compound returns. The issue with the arithmetic mean, as discussed in OCA Statement 2, is that it calculates the average while treating each year independently. So, the arithmetic mean may be more accurate for estimating the expected return for any one-year period. However, investors are not exclusively investing on one-

year time horizons, and because of this the geometric mean should be used when calculating the historical return on the S&P 500 for purposes of the CAPM analysis.

Q. In your Direct Testimony, you used the 10-year forecasted risk premiums from multiple sources from investment and investment advisory firms such as Vanguard, Schwab, and Duff and Phelps. Do you believe these risk premiums misrepresent the Market Risk Premium, as Mr. D'Ascendis alleges?

A. No. Mr. D'Ascendis argues that the forecasted risk premium by the firms that I used in my estimation are not indicative of the actual market risk premium because they are the "expected returns from pension funds or investment houses". I believe that these forecasts represent the risk premiums that investors can expect in the coming decade. These publications are meant to inform investors on what they should expect their risk premium to be over the next decade, representative of the entire market.

While Mr. D'Ascendis' explanation of the difference between expected and required returns is correct, his argument means to change the function of the risk premium in its place in the CAPM. The risk premium, by definition, is the expected return on the entire market minus the risk-free rate of return.[5] After using the expected return, risk free rate, and beta as inputs in the CAPM, the CAPM calculates the required rate of return to invest in a specific stock. In this case, the stock is a regulated water company similar to the Proxy Group of companies. Simply put, the CAPM uses the expected returns on the market, among other inputs, to find the required return to invest in a stock.

[5] Mullins, D. W. (August 1, 2014). Does the capital asset pricing model work? Harvard Business Review. https://hbr.org/1982/01/does-the-capital-asset-pricing-model-work.

Also, I would like to point out that the 6.50% that I used as the measure of the risk premium in my CAPM analysis is higher than the Value Line projections and resulting risk premium used by Mr. D'Ascendis (5.98%)[6] and I&E Witness Keller (6.36%).[7] What does not exist in my CAPM analysis that leads to my lower ROE estimate is the excessively high risk premiums of the Value Line S&P 500 forecast (12.30%) and the Bloomberg S&P 500 forecast (14.71%).[8]

<u>Size Adjustment</u>

Q. In his Rebuttal Testimony, Mr. D'Ascendis continues to promote a 100 basis point size adjustment to compensate CUPA investors for the increased risk of investment in a comparatively small company. Does his argument change your belief that a size adjustment is unnecessary and would lead to a higher ROE than should be authorized?

A. It does not. The findings of Dr. Aswath Damodaran still hold true. The size premium exists historically over the very long term, but today it is small and there is little evidence that size is the actual cause of the premium. The findings of Dr. Vitali Kalesnik and Noah Beck in their study of the size premium came to a similar conclusion as Dr. Damodaran. Dr. Kalesnik and Mr. Beck concluded after their quantitative analysis of the size premium:

> Today, more than 30 years after the initial publication of Banz's paper, the empirical evidence is extremely weak even before adjusting for possible biases. The return premium is not statistically significant in any of the international markets, whether taken alone or in combination. <u>The U.S. long-term size</u>

[6] CUPA Statement No. 5-R, Schedule DWD 1-R, p. 23
[7] I&E Exhibit No. 2, Schedule 14, p. 1
[8] CUPA Statement No. 5-R, Schedule DWD 1-R, p. 23

> premium is driven by the extreme outliers, which occurred three-quarters of a century ago. These extreme outliers confound the standard techniques of setting confidence bounds around the estimated premium. Finally, adjusting for biases, most notably the delisting bias, makes the size premium vanish. If the size premium were discovered today, rather than in the 1980s, it would be challenging to even publish a paper documenting that small stocks outperform large ones. All this evidence makes us question the existence of the size premium as such.[9]

Q. Do you have any other comments in response to Mr. D'Ascendis' proposed adjustment to reflect the size of Community Utilities of Pennsylvania?

A. Yes. It is important to remember that CUPA, being a subsidiary of Corix, is not a publicly-traded company and does not access equity in the same manner as the utilities in the proxy group. As such, its size should not be considered in establishing a return on equity estimate.

Further, most of the water utilities in the proxy groups utilized by Mr. D'Ascendis and myself have multiple subsidiaries operating in different jurisdictions. Applying the logic behind Mr. D'Ascendis size adjustment, each of those subsidiaries should be considered smaller and thus, riskier, than the utilities in the proxy group. This logic is flawed, however, as those subsidiaries (including CUPA) do not raise their equity capital directly from investors but as a consolidated entity.

Conclusion

Q. Would you like to make any changes to your rate of return recommendation previously stated in OCA Statement 2?

[9] Kalesnik, V. & Beck, N. (2014, November). Busting the Myth About Size. Simply Stated. https://www.researchaffiliates.com/content/dam/ra/documents/284-busting-the-myth-about-size.pdf.

A. No. I maintain my original recommendation, which is shown below in Table 1.

	Percent	Cost Rate	Cost of Money
Long Term Debt	52.32%	5.05%	2.64%
Common Equity	47.68%	9.34%	4.46%
Total	100.00%		7.10%

Table 1

Q. Does this conclude your Surrebuttal Testimony?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Noah D. Eastman, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 2SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021
*316715

Signature: _____
Noah D. Eastman

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

OCA STATEMENT 3SR

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket Nos. R-2021-3025206
	)	R-2021-3125207
Community Utilities of Pennsylvania, Inc.	)	

SURREBUTTAL TESTIMONY
OF
JEROME D. MIERZWA

ON BEHALF OF
THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

SEPTEMBER 3, 2021

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN THIS PROCEEDING?

A. Yes. My direct testimony was submitted as OCA Statement 3 on August 13, 2021, and my rebuttal testimony was submitted as OCA Statement 3R on August 27, 2021. My direct and rebuttal testimony addressed the water and wastewater cost of service ("COS") studies and rate design proposals presented by Community Utilities of Pennsylvania, Inc. ("CUPA" or "Company") and the OCA's responsive recommendations.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to the water and wastewater service rate design rebuttal testimony presented by CUPA witness Andrew Dickson.

II. WATER RATE DESIGN

Witness: Andrew Dickson

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT THE WATER SERVICE RATES OF TAMIMENT CUSTOMERS BE MOVED TOWARD THOSE THAT WOULD BE APPLICABLE ON A CONSOLIDATED BASIS, AND THAT FULLY CONSOLIDATED RATES

NOT BE ADOPTED IN THIS PROCEEDING. WHAT WAS MR. DICKSON'S RESPONSE?

A. At CUPA's requested revenue increase, fully consolidating the rates of Tamiment customers would result in a rate increase of 81% for the average Tamiment customer, which is 2.2 times the system average increase of 36.8%. I recommended that, instead, Tamiment customer rates be moved toward those that would be applicable on a consolidated basis to provide for gradualism. Mr. Dickson refers to this as partial consolidation. Mr. Dickson disagrees with partial consolidation for several reasons. He contends that partial consolidation will leave CUPA's other customers subsidizing Tamiment customers. He also claims that Tamiment customers have not experienced a rate increase in over 10 years, and that the 81% increase proposed by CUPA equates to an average increase of only 6.1% per year.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON?

A. As indicated in my direct testimony, while there is no hard and fast rule with respect to applying the concept of gradualism, typically an increase of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. An increase of 81%, or 2.2 times the system average increase, is not consistent with the concept of gradualism which is a principle of a sound rate design. Changes in rates should occur over time so that ratepayers can adapt to changing prices. Ratepayers should have an opportunity to adapt to changing prices regardless of when the last change in rates occurred. While partial consolidation of rates may result in some subsidization of Tamiment customers by other customers, that subsidization is significantly reduced under partial consolidation.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT CUPA'S EXISTING FIXED MONTHLY CUSTOMER CHARGES BE MAINTAINED. WHAT IS MR. DICKSON'S RESPONSE TO YOUR RECOMMENDATION?

A. In my direct testimony, I recommended that all of CUPA's fixed monthly customer charges be maintained because the cost of service study presented on page 16 of CUPA Exhibit SAM-1 (Revised) presented by Mr. Scott A. Miller indicated that the existing charges already exceeded cost-based charges. In responding to my recommendation, Mr. Dickson initially focuses on Tamiment customers and claims that since I have not performed a cost of service study for Tamiment customers, I cannot make such an assertion. Mr. Dickson is correct that I have not performed a cost of service study for Tamiment customers. Mr. Miller has presented a combined cost of service study for all territories served by CUPA, including the Tamiment service territory. A cost of service study solely for Tamiment customers would be of no value in this proceeding since CUPA eventually intends to consolidate the water rates of all of its service territories. I further discuss my recommendation to maintain CUPA's existing fixed monthly customer charges later in my testimony in responding to Mr. Dickson's claims concerning consolidated service territory customer charges.

Q. MR. DICKSON CLAIMS THAT YOUR RATE DESIGN RECOMMENDATIONS WOULD RESULT IN CUPA NOT RECOVERING ITS TOTAL REVENUE REQUIREMENT. DO YOUR RATE DESIGN RECOMMENDATIONS PROVIDE CUPA WITH THE RECOVERY OF ITS TOTAL REVENUE REQUIREMENT?

A. Yes. To support his claim, Mr. Dickson points to my recommendation that "Tamiment volumetric charges should be moved 70% toward the volumetric charge that would have been applicable on a consolidated basis." He then assumes that CUPA would be denied recovery of the 30% revenue difference between the Tamiment and the consolidated volumetric charge. Mr. Dickson misinterprets my recommendation. The 30% revenue difference would then be reflected in the consolidated volumetric charge, providing for recovery of CUPA's total revenue requirement.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT THE AVAILABILITY CHARGES FOR TAMIMENT SHOULD BE MOVED 55% TOWARD THE PROPOSED CHARGE. WHAT IS MR. DICKSON'S RESPONSE?

A. Mr. Dickson indicates that it is not clear how I concluded that 55% was appropriate, but assumes I am using a benchmark of 1.5 times the overall system increase. This assumption is correct. He then claims my 55% recommendation is flawed because it fails to consider the length of time since the last rate increase in the Tamiment availability charge, lacks a robust timeline for remedy, creates subsidization, and may deny CUPA recovery of its total revenue requirement.

Q. WHAT IS YOUR RESPONSE?

A. As indicated previously, the length of time since the last increase in Tamiment's availability charge is irrelevant. Customers need an opportunity to adjust to changing prices. Customers cannot adapt to changing prices before the change actually occurs. Further movement toward consolidated availability charges can be evaluated in CUPA's next base rate case. My recommended Tamiment availability charge significantly reduces the current subsidy. My recommendation concerning Tamiment

availability charges will not deny CUPA recovery of its total revenue requirement, as the unrecovered revenues would be recovered by maintaining the current availability charge for the consolidated service territory which CUPA has proposed to decrease, and increasing volumetric charges, if necessary.

Q. MR. DICKSON NOTES THAT THE DIFFERENCE BETWEEN YOUR PROPOSED 1.5 TIMES THE SYSTEM AVERAGE INCREASE FOR TAMIMENT AVAILABILITY CUSTOMERS AND PROPOSED 1.7 TIMES THE SYSTEM AVERAGE INCREASE FOR TAMIMENT RESIDENTIAL WATER CUSTOMERS ERODES YOUR RECOMMENDATION FOR GRADUALISM. WHAT IS YOUR RESPONSE?

A. The 1.7 times the system average increase referenced by Mr. Dickson for Tamiment Residential water customers is my recommended increase in the volumetric charge. When combined with my recommendation to maintain fixed monthly customer charges, the increase for the average Tamiment Residential would be 1.5 times the system average increase. Therefore, contrary to Mr. Dickson's claim, I am proposing a 1.5 times the system average increase for both Tamiment availability customers and the average Tamiment Residential water customer.

Q. AS YOU PREVIOUSLY INDICATED, IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT ALL EXISTING FIXED MONTHLY CUSTOMER CHARGES BE MAINTAINED, AND MR. DICKSON INITIALLY ADDRESSED THAT RECOMMENDATION WITH RESPECT TO TAMIMENT CUSTOMERS. MR. DICKSON SUBSEQUENTLY ADDRESSED THIS RECOMMENDATION FOR THE CONSOLIDATED

SERVICE TERRITORY. DOES MR. DICKSON'S ADDITIONAL TESTIMONY JUSTIFY INCREASING FIXED MONTHLY CUSTOMER CHARGES?

A. No. Mr. Dickson claims that my recommendation concerning fixed monthly customer charges fails to consider the recovery of additional fire protection rate revenues. He identifies these additional revenues to be $132,505 (CUPA W Statement No. 4-R at 13). Page 12 of CUPA Exhibit SAM-1 (Revised) identifies CUPA's customer-related costs to be $649,668. Including the additional fire protection revenues as customer-related costs that should be recovered through customer charges would increase those costs to $782,173, or by 20 percent. The current consolidated service territory monthly customer charge for a 5/8-inch meter is $17.25 and the Tamiment charge, on a monthly basis, is $18.18. Increasing each of the cost-based customer charges reflected on page 16 of CUPA Exhibit SAM-1 (Revised) by 20 percent would result in charges for all meter sizes except a 5/8-inch meter in the consolidated service territory that are less than the current charges. Therefore, there is no cost basis to increase to increase these customer charges. The cost-based charge for a 5/8-inch meter in the consolidated service territory as reflected on page 16 of CUPA Exhibit SAM-1 (Revised) is $14.80. Increasing this rate by 20 percent results in a customer charge of $17.76 which exceeds the current charge of $17.25. However, the $17.76 charge is based on CUPA's requested revenue requirement in this proceeding. CUPA is unlikely to receive 100 percent of its requested revenue requirement. If CUPA receives 97 percent of its requested revenue requirement and rates are proportionately scaled-back as I have recommended, the $17.76 charge would be reduced to $17.25 and there would be no cost basis to increase any of CUPA's current fixed monthly customer charges.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMEND THAT IF CUPA IS AUTHORIZED A WATER RATE INCREASE WHICH IS LESS THAN ITS REQUESTED INCREASE, CUPA'S PROPOSED VOLUMETRIC AND AVAILABILITY CHARGES SHOULD BE PROPORTIONATELY SCALED BACK BEFORE APPLYING YOUR RATE DESIGN RECOMMENDATIONS. WHAT IS MR. DICKSON'S RESPONSE?

A. Mr. Dickson rejects my recommendation. He proposes that only volumetric charges be adjusted. He claims that such an approach is simpler to address changes in revenue requirements.

Q. WHAT IS YOUR RESPONSE?

A. If the Commission adopts my fixed monthly charge recommendation, any change in revenue requirements should also adjust availability charges. CUPA has requested a revenue requirement increase due to deficiencies in the recovery of costs through volumetric and availability charges. Therefore, volumetric and availability charges should both be adjusted. If the Commission does not accept my fixed monthly charge recommendation, then these charges should also be adjusted. It would not be a difficult task to adjust availability charges or fixed monthly charges. CUPA adjusted both types of charges to provide for the recovery of its revenue requirement in its filing in this proceeding.

III. WASTEWATER RATE DESIGN

Witness: Andrew Dickson

Q. MR. DICKSON CLAIMS THAT YOU HAVE A CONCERN WITH RESPECT TO THE MAGNITUDE OF THE PROPOSED RATE INCREASE FOR TAMIMENT WASTEWATER CUSTOMERS AND YOU RECOMMENDED THAT THE INCREASE SHOULD BE ADJUSTED TO PROVIDE FOR GRADUALISM. WHAT IS YOUR RESPONSE?

A. Mr. Dickson's claim is not accurate. The Company has proposed an increase of 19% for the average Tamiment Residential customer using 3,000 gallons of water per month. I have proposed an increase for the average Tamiment Residential customer equal to the system average increase of 37.9%.

Q. WHAT DID YOU RECOMMEND IN YOUR DIRECT TESTIMONY CONCERNING THE CONSOLIDATION OF WASTEWATER RATES?

A. CUPA is proposing to consolidate the rates of all three service territories and charge all customers, except schools and availability customers, a single monthly fixed (flat) charge. Currently, only the rates of the Utilities, Inc. of Pennsylvania and Penn Estates service territories (consolidated service territory) are consolidated. In my direct testimony, I recommended that in its next base rate proceeding CUPA convert customers in the consolidated service territory that are currently assessed flat rates to metered rates (made up of fixed and volumetric charges similar to the charges assessed to Tamiment customers). For purposes of this proceeding, I recommended there be no change to the existing structure of rates, so that the customers in the consolidated service territory continue to pay flat rates and the Tamiment customers continue to pay metered rates.

Q. DOES CUPA AGREE WITH YOUR PROPOSAL TO CONVERT CURRENT CONSOLIDATED SERVICE TERRITORY CUSTOMERS TO METERED RATES IN THE NEXT BASE RATE CASE?

A. No. Mr. Dickson claims that flat rates are common for wastewater customers. He claims that CUPA's goal of incorporating Tamiment into its current wastewater rate design is not to eliminate volumetric rates; he claims it is a byproduct. Mr. Dickson has indicated that CUPA is willing to consider volumetric rates in future cases, but the cost of service presented by CUPA does not assign costs to customer classes based on flow requirements, which would be a prerequisite to adopting metered rates based on class costs.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON'S CLAIMS THAT METERED RATES SHOULD NOT BE MAINTAINED FOR TAMIMENT IN THIS PROCEEDING?

A. Flat rates provide customers with an unlimited minimum usage allowance. That is, customers can use an unlimited amount of wastewater service without being assessed additional charges. Typically, minimum allowances are defined quantities (e.g., first 1,000 gallons per month). Thus flat rates are the most extreme form of minimum allowance because a customer's actual use of the utility system has no impact on rates. As explained in my direct testimony, it is Commission policy to eliminate minimum allowances and move utility rates toward metered rates. Assessing Tamiment customers a flat rate would be inconsistent with this Commission policy. In addition, it would be confusing to Tamiment customers if they were moved to a flat rate in this proceeding only to be moved back to metered rates in the next proceeding, as Mr. Dickson suggests CUPA may consider.

I have not proposed in this proceeding that consolidated service territory customers be assessed metered rates. Therefore, a cost-based rate for consolidated service territory customers need not to be determined in this proceeding. In its next base rate case, as part of the requirement that CUPA propose metered rates (made up of fixed and volumetric charges) for Utilities Inc. of Pennsylvania and Penn Estates customers, CUPA should provide a cost of service study that assigns costs to customer classes based on flow requirements.

Q. ON WHAT DO YOU BASE YOUR CLAIM THAT IT IS COMMISSION POLICY TO ELIMINATE MINIMUM ALLOWANCES AND TO MOVE UTILITY RATES TOWARD METERED RATES?

A. In A Guide to Utility Ratemaking, published by the Public Utility Commission and authored by two Commissioners, at page 151 it states: "The Commission's policy is to require the installation of meters and set usage rates to encourage conservation."[1] The internal citation is to 52 Pa. Code § 65.7. See also 52 Pa. Code § 65.20(6). The Commission's policy to encourage conservation by moving customers to metered, usage-based rates is also reflected in Commission Orders.[2]

Q. MR. DICKSON CLAIMS THAT TO HAVE TAMIMENT CUSTOMERS FULLY PAY THEIR COST OF SERVICE, AN INCREASE OF 104% WOULD BE REQUIRED TO CURRENT TAMIMENT RATES. WHAT IS YOUR RESPONSE?

[1] https://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf.

[2] See, for example: Pa. P.U.C. v. PPL Elec. Util. Corp., 237 PUR4th 419, 461 (PaPUC 2004); Pa. P.U.C. v. Total Envtl. Solutions, Inc. - Treasure Lake Water Div. and Treasure Lake Wastewater Div., 103 PaPUC 110, 160-161 (2008); Pa. P.U.C. v. Emporium Water Co., 95 PaPUC 191, 213, 208 PUR4th 502, 524 (2001); Pa. P.U.C. v. Lemont Water Co., 81 PaPUC 392, 420-421 (1994).

A. As previously explained, CUPA is proposing an increase of 19% for the average Tamiment Residential wastewater customer. Mr. Dickson fails to explain why an average increase of 19% is appropriate for the average Tamiment Residential customer when an average increase of 104% is required to recover the cost of service.

Q. MR. DICKSON CLAIMS THAT THE INCREMENTAL BENEFIT OF ADOPTING METERED RATES FOR ALL CUSTOMERS WOULD BE OUTWEIGHED BY THE ADMINISTRATIVE COSTS, AND IT MAKES MORE SENSE FOR CUPA TO INCORPORATE TAMIMENT RATES INTO THE CURRENT CONSOLIDATED RATE STRUCTURE THAN VICE VERSA. WHAT IS YOUR RESPONSE?

A. As indicated previously, adopting metered rates for the consolidated service territory would be consistent with the Commission's policy of eliminating minimum allowances and moving utility rates toward metered rates. Incorporating Tamiment rates into the current consolidated rate structure would be inconsistent with this policy and should not be pursued. In addition, adopting metered rates for all CUPA customers would provide additional incentives for customers to conserve and reduce their demands for both water and wastewater services. In the long run, the reduced demands for service will likely reduce CUPA's costs of providing water and wastewater services by reducing future capital expenditures and operating costs.

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMENDED THAT CUPA ALSO ADOPT A LOW-INCOME VOLUMETRIC CHARGE FOR RESIDENTIAL WASTEWATER CUSTOMERS. DOES CUPA ACCEPT THAT A LOW-INCOME RATE SHOULD BE ESTABLISHED FOR TAMIMENT RESIDENTIAL CUSTOMERS?

A. Not at this time. Mr. Dickson claims that CUPA's cost of service study does not distinguish between types of customers and that Residential and Commercial customers are treated equivalently. He claims that the creation of a wastewater Low-Income rate only for Residential customers necessitates a separation of Residential and Commercial customers to prevent interclass subsidies. He further claims that I have not proposed a capping method to discourage abnormal demands from Low-Income customers. Finally, Mr. Dickson claims that the primary goal of CUPA's wastewater rate design is to provide consistency to customers in their rate design to facilitate understanding of their bills under new rates, and to fully incorporate the Tamiment service territory into CUPA's existing consolidated service territory rate design.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON'S CLAIMS CONCERNING THE ADOPTION OF A WASTEWATER LOW-INCOME VOLUMETRIC RATE FOR TAMIMENT RESIDENTIAL CUSTOMERS?

A. Under CUPA's rate design proposals for water service, the same volumetric rates were initially proposed for both Residential and Commercial customers, but then the Residential rate was increased to provide recovery of the discounts provided for under the water Low-Income program. There are no interclass subsidies created by the water Low-Income program.

Under the current Tamiment service territory wastewater rate structure, Residential and Commercial customers are currently assessed the same volumetric charge, and under my rate design proposal, Residential and Commercial customers would be initially assessed the same volumetric rates but the Residential volumetric rate would be adjusted to provide for the recovery of the discounts provided for under my proposed wastewater Low-Income program. Under my proposal, for CUPA's low-

income Residential wastewater customers in the other systems, who are not currently charged volumetric rates, their flat rates would be reduced and flat rates for the other Residential wastewater customers would be increased proportionately to recover the revenue associated with the discount. There would be no interclass subsidies crated by the wastewater Low-Income program. Therefore, Mr. Dickson's claim of interclass subsidies is without merit.

With respect to a capping method to discourage abnormal demands from Low-Income customers, there is no factual basis to impose a cap. At this time, we do not know how many customers will qualify for the Low-Income program or have any information about their usage with or without the discounted rate. Although CUPA has not proposed a cap for its water Low-Income program, a cap would be equally unsupported and premature. Data can be gathered during the pilot program and addressed by all parties in the next base rate case. For now, for those CUPA water and wastewater customers with volumetric rates, the volumetric rate itself will discourage "abnormal demands" because customers will still pay more for higher usage.

As previously explained, the Company's goal of incorporating Tamiment service territory rates into the existing consolidated service territory rate design is not an appropriate goal because it is inconsistent with Commission policy.

Q. DOES CUPA ACCEPT YOUR RECOMMENDATION TO LIMIT THE INCREASE IN THE TAMIMENT AVAILABILITY CHARGE TO PROVIDE FOR GRADUALISM?

A. No. Mr. Dickson claims, as he did in response to my recommendation for partial consolidation of Tamiment water rates, that applying gradualism in establishing the

Tamiment availability charge is not appropriate since it has been 10 years since the last rate increase.

Q. WHAT IS YOUR RESPONSE TO MR. DICKSON'S CLAIMS?

A. As explained in my response to Mr. Dickson's opposition to partial consolidation of Tamiment water rates, changes in rates should occur over time so that customers can adapt to changing prices. Gradualism should be provided for regardless of when the last change in rates occurred.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 3SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021
*316718

Signature: Jerome D. Mierzwa

Jerome D. Mierzwa

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 4SR

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket Nos. R-2021-3025206 (water)
	:	R-2021-3025207 (wastewater)
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	:	

SURREBUTTAL TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

SEPTEMBER 3, 2021

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, Pennsylvania, 17111.

Q. MR. FOUGHT, DID YOU ALSO SUBMIT DIRECT TESTIMONY IN THIS PROCEEDING ON BEHALF OF THE OFFICE OF CONSUMER ADVOCATE?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to portions of the rebuttal testimony by Emily Long, CUPA W Statement No. 7-R, regarding: (1) isolation valves; (2) boil water and do not consume advisories; (3) customer complaints regarding the Company's water systems; and (4) customer complaints regarding the Company's wastewater systems.

ISOLATION VALVES

Q. WHAT IS THE COMPANY'S POSITION ON EXERCISING ISOLATION VALVES IN ITS WATER SYSTEMS?

A. Ms. Long's Rebuttal Testimony did not address the exercising of isolation valves in the Tamiment or Penn Estates water systems. For Westgate, Ms. Long explained that during the 2020 inspection program, 100% of the Westgate system valves were inspected. Seventy-one valves were identified and two in prior system records were found to be non-existent during this inspection. In 2021 and in future years, 50% of valves will be inspected each year in rotation. Valves are grouped

into Zone 1 and Zone 2. Zone 1 valves will be exercised in odd number years. Zone 2 will be exercised in even number years. Valve inspections consist of exercising a water valve and filling out an inspection report to detail valve condition findings.[1]

Q. DO YOU HAVE ANY COMMENTS ON THE COMPANY'S VALVE EXERCISING PROGRAM?

A. As I stated in my Direct Testimony, the Company's records for each of its systems should include (1) the valve location, (2) date of attempt to exercise each valve; and (3) if the valve was broken or operable (successfully exercised). If the valve could not be properly exercised, the valve should be scheduled to be repaired or be replaced. The Company should furnish the OCA and other parties a report on the exercising records and schedule of any repair/replacements as part of the next rate case. The Company's plan to exercise 50% of valves in the Westgate water system is reasonable, assuming that its records show the information just discussed.

BOIL WATER AND DO NOT CONSUME ADVISORIES

Q. WHAT IS THE COMPANY'S POSITION ON BOIL WATER (BWA) AND DO NOT CONSUME ADVISORIES?

[1] CUPA Statement W&WW 7-R, pp. 18-19.

A. According to Ms. Long, each of the Company's BWAs has been issued in compliance with Department of Environmental Protection regulations in 25 Pa. Code Chapter 109 regarding public notification.[2]

Q. WHAT IS YOUR RESPONSE?

A. Given the concerns raised by customers in this proceeding, the Company should submit copies of all BWAs and Do Not Consume advisories to the OCA and parties every six months until the Company files its next base rate case.

TAMIMENT WATER SYSTEM

Q. WHAT IS THE COMPANY'S POSITION ON THE CUSTOMER COMPLAINTS RECEIVED BY THE COMPANY PRIOR TO THE PUBLIC INPUT HEARINGS (PIHs) REGARDING WATER QUALITY ISSUES IN THE TAMIMENT WATER SYSTEM?

A. Ms. Long stated that during 2019 and 2020 the Company received few water quality complaints, i.e. three dirty water complaints, eight low pressure and two chlorine odor complaints. She explained that (1) the dirty water and pressure complaints were related to switching wells for maintenance of different pressure zones; (2) five of the low pressure complaints were due to customer plumbing issues; (3) the remaining two low pressure calls were caused by an electrical issue related to a variable frequency pump that was resolved within 12 hours of

[2] CUPA Statement W&WW 7-R, pp. 26-27.

notification to the Company; and (4) the two chlorine odor complaints were investigated, but the operator could not detect any chlorine or other odors.[3]

Q. ARE MS. LONG'S RESPONSES TO THOSE CUSTOMER COMPLAINTS RECEIVED PRIOR TO THE PIH REASONABLE?

A. Yes.

Q. WHAT ISSUES DID MS. LONG IDENTIFY THAT CUSTOMERS TESTIFIED ABOUT AT THE PIH REGARDING WATER QUALITY ISSUES IN THE TAMIMENT WATER SYSTEM?

A. Ms. Long stated that customers testified about rings in toilets, discolored clothes, sediment in water, chlorine odor, water quality notices, and failing hot water heaters.[4]

Q. WHAT IS THE COMPANY'S POSITION ON THOSE COMPLAINTS?

A. Ms. Long did not specifically address customer testimony about rings in toilets, discolored clothes, sediment in water and failing hot water heaters in the Tamiment Water System.

Ms. Long did testify that: (1) only two Tamiment customers at the public input hearings indicated they had low pressure issues; (2) low pressure concerns within

[3] CUPA Statement W&WW 7-R, pp. 5-6.
[4] CUPA Statement W&WW 7-R, p. 5.

the Tamiment service territory were previously addressed; and (3) investigations do not indicate any ongoing or material low pressure concerns.[5]

Q. HOW MANY CUSTOMERS TESTIFIED AT THE PIH ABOUT RINGS IN TOILETS, DISCOLORED LAUNDRY, SEDIMENT IN WATER AND DAMAGED APPLIANCES AND FAILING HOT WATER HEATERS IN THE TAMIMENT WATER SYSTEM?

A. Customers testified in the PIH about the following issues in the Tamiment Water System:[6]

- Rings in toilets 4,
- Discolored laundry 2,
- Sediment in water 3, and
- Damaged appliances 2, and
- Failing hot water heaters 4.

Q. WHAT SHOULD THE COMPANY DO TO ADDRESS THESE ISSUES?

A. The Company should obtain and provide laboratory tests for hardness, total dissolved solids (TDS) and sulfate for each of its two wells. As I explained in my Direct Testimony, higher levels of hardness, TDS, and sulfate can cause many of the problems identified by the Tamiment customers.

Also, a customer on Old Took Drive testified that she took TDS readings that exceeded 600 at two locations on the Tamiment Water System.[7] It should be noted that the customer did not specify the units of the TDS readings or identify

[5] CUPA Statement W&WW 7-R, p. 8
[6] OCA Statement 4, p.21-22
[7] TR 235-236.

the testing equipment. The Company should provide TDS test data on the two wells in the Tamiment Water System to verify that the well water does not exceed 500 mg/l TDS.

Q. WHY IS IT IMPORTANT THAT THE COMPANY DETERMINE WHAT ARE THE TDS LEVELS FOR THE TAMIMENT WELLS?

A. If the TDS exceeds 500 mg/l, the Company may have to provide treatment.[8] According to the Company's response to informal discovery,[9] the Company does not have any TDS test data on the Tamiment wells.

Q. WHAT IS THE COMPANY'S POSITION ON HYDRANT TESTING AND FLUSHING IN THE TAMIMENT WATER SYSTEM?

A. The Company flushes hydrants in water systems at least once per year. The Company acquired Tamiment on 8/14/19 and did not flush hydrants in 2019. Tamiment hydrants were flushed 7/1/20 – 7/6/20. Community wide communication was sent 6/29/20 and 7/2/20 letting customers know hydrants would be flushed. Hydrants were flushed 6/14/21 – 6/18/21, community wide communication was sent 6/11/21. The Company has a 3-year hydrant operation and maintenance schedule with Rogers Hydrant Service starting in 2020.[10]

[8] Treatment may also be required if sulfates exceed the Secondary Maximum Contaminant Level of 250 mg/l.
[9] On August 31, 2021, the Company served verified responses to informal discovery issued by the OCA.
[10] CUPA Statement W&WW 7-R, pp. 7-8.

Q. DO YOU AGREE WITH THE COMPANY'S POSITION ON HYDRANT TESTING AND FLUSHING OF THE TAMIMENT WATER SYSTEM?

A. Yes.

PENN ESTATES WATER SYSTEM

Q. WHAT ISSUES DID MS. LONG IDENTIFY THAT CUSTOMERS TESTIFIED ABOUT AT THE PIH REGARDING WATER QUALITY ISSUES IN THE PENN ESTATES WATER SYSTEM?

A. Ms. Long identified that customers testified about the August 2020 system outage, Boil Water Advisories, sediment in water and appliance issues.[11]

Q. WHAT INFORMATION DID MS. LONG PROVIDE ABOUT THE AUGUST 2020 WATER SYSTEM OUTAGE EVENT, WHICH MULTIPLE CUSTOMERS TESTIFIED ABOUT AT THE PUBLIC INPUT HEARING?

A. Ms. Long stated that in early 2020 the Company's wells could not keep up with the demand for water because of leaks and an increase in water usage due to people staying home because of Covid-19. In May 2020, the Company started sending voice reaches (VR) asking customers to conserve water and look for leaks within and around their homes and started hauling in bulk water to supplement tank levels. A leak detecting company was contracted to look for leaks. Eventually, on August 3, 2020, the water stored in the highest elevation tanks became low and the Company issued a boil water advisory and notified DEP. The Company

[11] CUPA Statement W&WW 7-R, p. 3.

provided pallets of bottled water to the customers which were delivered to the community's Welcome Center for almost 3 weeks. During that same period, operations discovered and repaired 3 large leaks in the system in July through August 2020. The Company completed the required water testing and the BWA was rescinded on August 13, 2020. A letter explaining what happened was mailed to all customers on September 8, 2020 and included in the Community's monthly newsletter in October 2020. In total, during 2020, the Company estimated 11,749,540 gallons in main breaks/leaks were identified and fixed at Penn Estates. Of that total, 7,334,540 gallons (or 62%) in main breaks/leaks were identified and fixed July to August. Because of the water shortage, the Company replaced 3 well pumps in 2020 and an additional well pump in 2021.[12]

Q. WHAT IS THE COMPANY PROPOSING TO PREVENT A REOCCURANCE OF THE AUGUST 2020 WATER OUTAGE?

A. The Company's contractor, GHD evaluated the system in late 2020 and early 2021 and prepared a report to provide recommendations to improve system operations to minimize loss of service. As stated by Ms. Long, this report dated February 23, 2021, makes the following recommendations: install new well(s), increase well efficiency, develop a written Standard Operating Procedure (SOP) for loss events, install booster pump to increase pressure in system, and hire third party leak detection specialist. The Company expects to start the engineering for a new well in 2023. The Company has written a SOP for water loss events and has a third-

[12] CUPA Statement W&WW 7-R, pp. 14-16.

party leak detection specialist available. GHD has also assisted the Company in assessing the feasibility of an interconnect with another water system.[13]

Q. DID MS. LONG PROVIDE ANY OTHER INFORMATION ABOUT THE AUGUST 2020 WATER OUTAGE?

A. Yes. Ms. Long provided information about the following issues: (1) complaints of dirty water regarding the hauled water; (2) the quality of the hauled water; (3) the suitability of the tankers hauling the water (4) the BWA was issued due to loss of pressure and (5) why the Well 4 pump was not lowered.

Ms. Long explained that when water was first hauled in by truck and discharged into a tank, the water flowing into the tank from the truck stirred sediment on the bottom of the tank resulting in customers experiencing dirty water. When operations realized this was the cause of the dirty water, they shut the tank valve prior to water being off loaded to prevent any stirred-up sediment from leaving the tank and allowed it to settle prior to reopening the valve.[14] Ms. Long's subsequent responses to informal discovery indicated that the hauled water was potable from an approved DEP source and hauled by tankers in accordance with Public Water Supply Permit.[15] Ms. Long stated that the August 2020 BWA was issued because of lack of pressure due to the tanks emptying.[16] Regarding lowering the pump in Well 4, Ms. Long stated that the Company's well permits would need to be reviewed and amended through DEP to lower a well pump which would be a costly

[13] CUPA Statement W&WW 7-R, pp. 20-21.
[14] CUPA Statement W&WW 7-R, p. 22.
[15] Public Water Supply Permit No. 3486567 dated July 12, 2017.
[16] CUPA Statement W&WW 7-R, p. 22.

and lengthy process which is not cost effective when compared to possibly permitting a new well for supply.[17]

Q. DO YOU HAVE ANY COMMENTS ON THE GHD REPORT AND THE COMPANY'S RESPONSES TO THE OTHER ISSUES CONCERNING THE AUGUST 2020 WATER OUTAGE?

A. Yes. The information provided about the hauled water and BWA have answered the questions about quality of the hauled water. Based on my review, implementation of the recommendations of the GHD Report[18] would greatly reduce or eliminate water outages in the future. Also, as I stated in my direct, the Company should have its engineer make recommendations and submit implementation schedules to: (1) provide adequate supply; (2) comply with DEP's minimum pressure of 20 pounds per square inch, gauge at ground level at all points in the distribution system under all conditions of flow; (3) reduce normal operating pressures exceeding 125 psi in its mains. If it is impossible to reduce the main pressure, the Company should install a pressure reducing valve upstream of the customer's service line; (4) increase pressures in low pressure areas so that it is suitable for all household purposes; (5) either drill a new well(s) or interconnect with another water supply utility; and (6) consider available financing assistance. The engineer's recommendations and schedules should be submitted to the OCA and the parties within one year.

[17] CUPA Statement W&WW 7-R, p. 21.
[18] Provided in response to informal discovery and marked Confidential.

Q. AFTER REVIEWING MS. LONG'S REBUTTAL TESTIMONY IN RESPONSE TO COMPLAINTS ABOUT DISCOLORED WATER[19], HAVE YOU CHANGED YOUR POSITION ON TESTING EXISTING WELLS IN THE PENN ESTATES SYSTEM?

A. Yes. If the recommendations in the GHD Report are implemented, those improvements should help to address water discoloration by increasing water supply so that wells do not draw air and adding a new source of water that does not require treatment for manganese.

Q. DID THE COMPANY PROVIDE THE INFORMATION YOU REQUESTED ABOUT ILLNESS COMPLAINTS IN THE PENN ESTATES WATER SYSTEM?

A. According to Ms. Long, the Company met with the two customers and explained that, although the Company had provided public notices for that time period in response to DEP requirements, the bacteria samples for March and April complied with DEP regulations. There has been no further contact from the customers about the illness complaints.[20]

WESTGATE WATER SYSTEM

Q. WHAT IS THE COMPANY'S POSITION ON COMPLAINTS ABOUT MOLD IN THE WESTGATE SYSTEM?

A. With regard to the mold complaints that occurred during 2019, the Company determined that closed valves had created dead-ends that caused chlorine residuals to drop lower than the surrounding areas and sediment to accumulate,

[19] CUPA Statement W&WW 7-R, p. 21.
[20] CUPA Statement W&WW 7-R, pp. 22-23.

which diminished the effectiveness of flushing. After opening the valves and flushing the system, the Company monitored the chlorine to ensure the issue was resolved. She also stated that the Company's 2020 complaints were due in the first case to the customer's internal plumbing, which was confirmed by the customer's plumber, and in the second case to an airborne bacteria that was growing externally on the faucets and unrelated to the water service.[21]

Q. DO YOU CONSIDER MS. LONG'S EXPLANATIONS REASONABLE?

A. Yes. It should be noted that all the Westgate treated water is purchased from the City of Bethlehem and the City's flushing operations and reservoir turnovers can also cause some Westgate customer complaints.

TAMIMENT, PENN ESTATES AND UIP WASTEWATER SYSTEMS

Q WHAT IS THE COMPANY'S POSITION ON THE SEWER BACK FLOW AND GRINDER PUMP ISSUES RAISED AT THE PIH?

A. Ms. Long testified that the ownership, operation and maintenance of grinder pumps and the sewer backflow/check valves are the customer's responsibility. The grinder pump discharges to a low pressure force main and the purpose of a sewer backflow/check valve is to prevent sewage from flowing back into the home when the grinder pump is not working. She also testified that an investigation by the Company and its contractor, Environmental Services Corporation (ESC), determined that the grinder pump issues during 2019 and 2020 on the Tamiment

[21] CUPA Statement W&WW 7-R, pp. 23-24.

Wastewater System were not a result of air or other blockages causing high pressures in the Company's low pressure force main.[22]

Q. DO YOU AGREE THAT THE INVESTIGATION BY THE COMPANY AND ESC WAS ADEQUATE TO DETERMINE THAT AIR OR OTHER BLOCKAGES IN THE COMPANY'S LOW-PRESSURE FORCE MAIN DID NOT CAUSE GRINDER PUMP PROBLEMS IN THE TAMIMENT WASTEWATER SYSTEM?

A. I can only agree that the investigation procedure was reasonable to determine that air or other blockages in the Company's low pressure force main would not cause high pressures at the time of the investigation.

Q. HAS THE COMPANY PROVIDED CUSTOMERS WITH INFORMATION REGARDING OPERATION AND MAINTENANCE OF GRINDER PUMPS?

A. Yes. Ms. Long testified that the Company has furnished such information to customers at the July 19, 2020 community meeting.[23]

Q. DO YOU HAVE ANY COMMENTS REGARDING PROVIDING CUSTOMERS INFORMATION REGARDING OPERATION AND MAINTENANCE OF GRINDER PUMPS?

A. Yes. The Company should provide every new customer that has a grinder pump with the information on operation and maintenance of grinder pumps or how to

[22] CUPA Statement W&WW 7-R, pp. 11-13.
[23] CUPA Statement W&WW 7-R, pp. 13-14.

obtain such information. The Company should also continue to provide the information to existing customers at future community meetings and upon request.

CONCLUSION

Q. PLEASE SUMMARIZE THE ACTIONS THE COMPANY SHOULD TAKE TO ADDRESS THE OUTSTANDING ISSUES RAISED IN YOUR DIRECT AND SURREBUTTAL TESTIMONY.

A. The Company should do the following:

- In future rate cases the Company should submit an individual PUC Form 500 for each of its water systems as other utilities that have multiple systems have agreed to do. This will be used for comparison with future submittals to determine progress in reducing UFW, especially in the Tamiment system.[24]

- For each of its water systems, the Company's records regarding isolation valves should include (1) the valve location, (2) date of attempt to exercise each valve; and (3) if the valve was broken or operable (successfully exercised). If the valve could not be properly exercised, the valve should be scheduled to be repaired or be replaced. As part of its next rate case filing, the Company should furnish the OCA and other parties a report on the exercising records and schedule of any repair/replacements.

- The Company should submit copies of all BWAs and Do Not Consume advisories to the OCA and other parties every six months until the Company files its next base rate case.

- For the Tamiment Water System, the Company should have each of its two wells tested for total dissolved solids, sulfates and hardness and provide the laboratory results to the OCA and parties within six months. If the TDS exceeds 500 mg/l or the sulfate exceeds 250 mg/l, the Company should have its engineer address the need for treatment to comply with the Pennsylvania Safe Drinking Water Act (Title 25, Chapter 109). The engineer's findings should be submitted to the OCA and other parties within one year.

- For the Penn Estates Water System, the Company should have its engineer make recommendations and submit implementation schedules that are

[24] OCA Statement 4, p. 5-6

necessary to: (1) ensure adequate supply; (2) comply with DEP's minimum pressure of 20 pounds per square inch, gauge at ground level at all points in the distribution system under all conditions of flow; (3) reduce normal operating pressures exceeding 125 psi in its mains. If it is impossible to reduce the main pressure, the Company should install a pressure reducing valve upstream of the customer's service line; (4) increase pressures in low pressure areas so that it is suitable for all household purposes; (5) either drill a new well(s) or interconnect with another water supply utility; and (6) consider available financing assistance. The engineer's recommendations and schedules should be submitted to the OCA and the parties within one year.

- For all applicable wastewater systems, the Company should provide every new customer that has a grinder pump with the information on operation and maintenance of grinder pumps or how to obtain such information. The Company should also continue to provide the information to existing customers at future community meetings and upon request.

- For the Penn Estates wastewater system, the Company should provide the OCA and other parties with copies of all the progress reports submitted to DEP regarding the Company's compliance with the DEP/Company Consent Order and Agreement (CO&A) dated October 22, 2020.[25]

Q. DOES THIS COMPLETE YOUR WRITTEN SURREBUTTAL TESTIMONY?

A. Yes, at this time. I reserve the right to supplement this testimony either in writing or orally if additional relevant information is received.

[25] OCA Statement 4, p. 27-28; OCA Exhibit TLF-1 (Paragraph 3.f).

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket Nos. R-2021-3025206 (W)
Community Utilities of Pennsylvania, Inc. --	:	R-2021-3025207 (WW)
Water and Wastewater Divisions	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 4SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: September 3, 2021 Signature: _____
*316717 Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

COMMONWEALTH OF PENNSYLVANIA

September 3, 2021

The Honorable Dennis J. Buckley
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission v. Community Utilities of Pennsylvania, Inc. - Water and Wastewater Divisions Docket Nos. R-2021-3025206 (Water) R-2021-3025207 (Wastewater)

Dear Judge Buckley:

Enclosed please find the Surrebuttal Testimony and Exhibit of Brian Kalcic, labeled OSBA Statement No. 1S, on behalf of the Office of Small Business Advocate ("OSBA"), in the above-captioned proceedings.

As evidenced by the enclosed Certificate of Service, all known parties will be served, as indicated.

If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Erin K. Fure

Erin K. Fure
Assistant Small Business Advocate
Attorney ID No. 312245

Enclosures
cc: PA PUC Secretary Rosemary Chiavetta (Cover Letter & Certificate of Service only)
Brian Kalcic
Parties of Record

OSBA STATEMENT NO. 1-S

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
	:	
v.	:	**Docket No. R-2021-3025206**
	:	**Docket No. R-2020-3025207**
	:	
COMMUNITY UTILITIES OF PENNSYLVANIA, INC.	:	
WATER AND WASTEWATER DIVISIONS		

Surrebuttal Testimony and Exhibit of

BRIAN KALCIC

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

Revenue Allocation
Rate Design

Date Served: September 3, 2021

Date Submitted for the Record: _____

Q. Please state your name and business address.

A. Brian Kalcic, 225 S. Meramec Avenue, St. Louis, Missouri 63105.

Q. Have you previously submitted testimony in this proceeding?

A. Yes, I have.

Q. What is the subject of your surrebuttal testimony?

A. I will respond to the water and wastewater rebuttal testimony submitted by CUPA witness Andrew Dickson.

<u>CUPA Witness Dickson</u>

Water Service

Q. Did CUPA update its filed water service rate design in rebuttal testimony?

A. Yes. As shown in CUPA W Rebuttal Exhibit AWD-1R, CUPA reduced its filed public hydrant charge in order to be consistent with Section 1328 of the Public Utility Code. The Company also revised its filed availability and customer charges upward to recover the foregone revenue associated with its reduced hydrant charge. There are no changes to CUPA's filed consumption charges, and the Company continues to advocate for complete consolidation of its Tamiment system rates at the conclusion of this proceeding.

Q. Does CUPA's revised rate design impact the Company's filed revenue allocation proposal?

A. Yes. Schedule BK-1-S summarizes the Company's revised class revenue allocation proposal. Page 1 shows CUPA's revised revenue allocation proposal on a total system basis, while the Company's revised increases to its Consolidated and Tamiment rate areas are shown on pages 2 and 3, respectively.

Q. How does CUPA's revised revenue allocation compare to its filed proposal shown in Schedule BK-1 of Exhibit BK-1?

A. As expected, a comparison of page 1 of Schedule BK-1-S to page 1 of Schedule BK-1 shows that the Company's revised rate design would shift $44,163 of revenue responsibility from the Public Fire class to the non-fire classes.

In addition, a comparison of pages 2-3 of the same schedules shows that the Company's revised rate design would further exacerbate the proposed increase to CUPA's Tamiment service territory stemming from rate consolidation. More specifically, under the Company's revised rate design, Tamiment water customers would now receive an overall increase of 83.8% (Schedule BK-1-S, page 3 of 3) compared to an original filed increase of 80.0% (Schedule BK-1, page 3 of 3).

Q. Do you agree with CUPA's revised rate design proposal?

A. In part. I agree with the Company's proposal to reduce its filed public hydrant charge but, as discussed below, I continue to disagree with CUPA's proposal to consolidate its Tamiment and Consolidated rate areas.

Q. On pages 4-5 of CUPA W Statement No. 4-R, Mr. Dickson argues that full consolidation of the Tamiment rate area is appropriate at this time since i) Tamiment has not experienced a rate increase for over ten years and ii) if Tamiment were a stand-alone system, its water rates would need to increase by over 185%. Do you agree?

A. No. The decision to consolidate a rate area in a given proceeding should be based primarily on the size of the rate increase associated with full rate consolidation. If rate consolidation can be achieved without imposing undue rate impacts on affected customers, then rate consolidation should go forward, independent of the amount of time that has transpired since the area's last rate adjustment. Conversely, if full rate consolidation would cause rate shock, then the process of rate consolidation should be carried out over two or more rate proceedings, once again independent of the amount of time that has transpired since the area's last rate adjustment.

Similarly, I would argue that the stand-alone increase otherwise applicable to a given rate area is immaterial to the issue of rate consolidation, inasmuch as rate consolidation is grounded on the principle of single tariff pricing, under which utility rates are based on system average rather than stand-alone costs.

Q. Do you find that CUPA's rate consolidation proposal in this proceeding would result in rate shock?

A. I do. As shown on page 3 of Schedule BK-1-S, CUPA is now proposing to increase its Tamiment rates by an average of 83.8%, or 2.27 times its requested system average increase of 36.9%. In order to mitigate rate impacts on customers in the

Tamiment rate area, the Commission should reject CUPA's rate consolidation proposal.

Q. Continuing on page 5 of his rebuttal testimony, Mr. Dickson claims that you appear "not to address the shortfall in revenue that partial consolidation" in your proposal would create. Is Mr. Dickson correct?

A. No. My recommendation in support of partial consolidation of the Tamiment rate area would not result in any revenue shortfall to the Company.[1] Mr. Dickson's comment may be alluding to the *initial* revenue shortfall that would be temporarily created by setting Tamiment consumption charges $2.075 (i.e., half of $4.15) per thousand gallons lower than Consolidated consumption charges in CUPA's proposed rate design. However, that initial revenue shortfall would be eliminated by subsequently increasing *all* consumption charges by the amount necessary to eliminate the shortfall, while maintaining the differential in the Consolidated and Tamiment consumption charges at $2.075 per thousand gallons.

Wastewater Service

Q. On pages 3 of CUPA WW Statement No. 4-R, Mr. Dickson argues that you have not demonstrated that the impact on non-Tamiment wastewater customers from not consolidating Tamiment rates is significant enough to

[1] See OSBA Statement No. 1 at page 12, lines 13-20.

warrant "complications of CUPA's tariff (i.e., maintaining separate rates for Tamiment customers)." What is your response?

A. I agree that full consolidation of Tamiment wastewater rates would not impose rate shock on non-Tamiment customers.[2] However, as I discuss on page 15 of my direct testimony, consolidation of wastewater rates would *favor* Tamiment system customers. In order to be consistent with my recommendation to not fully consolidate water rates, which would benefit Tamiment customers, I also recommend that Tamiment wastewater rates not be fully consolidated, in order to provide some rate design benefits that flow in the other direction, i.e., to *non-Tamiment* customers. In other words, my recommendation with respect to partial consolidation of Tamiment wastewater rates is intended solely to provide a degree of balance with respect to the overall benefits that flow to Tamiment and non-Tamiment customers under the OSBA's partial rate consolidation proposals.

Q. Does this conclude your surrebuttal testimony?

A. Yes.

[2] See Schedule BK-2 of Exhibit BK-1.

EXHIBIT BK-1S

Schedule BK-1-S

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation on Rebuttal of its
Requested Increase in Total Base Rate Water Revenue
Basis: Total System under Consolidated Rates
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,963,901	$675,711	34.4%
2	Commercial	$35,353	$23,502	66.5%
3	Availability	$35,394	$35,297	99.7%
4	Public Fire	$20,929	$23,243	111.1%
5	Total Company	$2,055,577	$757,752	36.9%

$757,517	Target
$235	Rounding

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1R.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation on Rebuttal of its
Requested Increase in Total Base Rate Water Revenue
Basis: Currently Consolidated Service Territories
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$1,709,788	$488,675	28.6%
2	Commercial	$26,978	$6,415	23.8%
3	Availability	$10,282	($1,662)	-16.2%
4	Public Fire	$20,929	$23,243	111.1%
5	Total	$1,767,976	$516,670	29.2%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1R.

Community Utilities of Pennsylvania, Inc. - Water Division

Company Proposed Allocation on Rebuttal of its
Requested Increase in Total Base Rate Water Revenue
Basis: Tamiment Service Territory
(Test Year Ending December 31, 2022)

Line	Classification	Present Base Revenue 1/	Proposed Increase Amount	Proposed Increase Percent
		1	2	3
1	Residential	$254,114	$187,036	73.6%
2	Commercial	$8,375	$17,087	204.0%
3	Availability	$25,112	$36,959	147.2%
4	Public Fire	$0	$0	-
5	Total	$287,600	$241,082	83.8%

Source: CUPA Response to I&E-RS-2-D & CUPA W Exhibit AWD-1R.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**Docket No. R-2021-3025206**
	:	**Docket No. R-2021-3025207**
	:	
Community Utilities of Pennsylvania, Inc. Water Divisions	:	
Community Utilities of Pennsylvania, Inc. Wastewater Divisions	:	

VERIFICATION

I, Brian Kalcic, hereby state that the facts set forth in my Surrebuttal Testimony labeled OSBA Statement No. 1-S are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities).

Date: September 2, 2021

(Signature)

Brian Kalcic

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	**R-2021-3025206**
	:	**R-2021-3025207**
Community Utilities of PA, Inc.	:	
Water/Wastewater	:	

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing have been served via email (*unless other noted below*) upon the following persons, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

The Honorable Dennis J. Buckley
Administrative Law Judge
Pennsylvania Public Utility Commission
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120
debuckley@pa.gov

Christine Maloni Hoover, Esquire
Erin Gannon, Esquire
Senior Assistant Consumer Advocate
Office of Consumer Advocate
555 Walnut Street, 5th Floor
Harrisburg, PA 17101
CHoover@paoca.org
egannon@paoca.org
(Counsel for OCA)

Allison C. Kaster, Esquire
Bureau of Investigation & Enforcement
400 North Street
Commonwealth Keystone Building
Harrisburg, PA 17120
akaster@pa.gov
(Counsel for BIE)

Thomas J. Sniscak, Esq.
Whitney E. Snyder, Esq.
Bryce R. Beard, Esq.
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100 North Tenth Street
Harrisburg, PA 17101
tjsniscak@hmslegal.com
wesnyder@hmslegal.com
brbeard@hmslegal.com
(Counsel for Community Utilities of PA)

/s/ Erin K. Fure

_____
Erin K. Fure
Assistant Small Business Advocate
Attorney ID No. 312245

DATE: September 3, 2021

CUPA W&WW STATEMENT NO. 2-RJ

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REJOINDER TESTIMONY

OF

PERRY BROWN

WATER & WASTEWATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Rebuttal Testimony of Perry Brown (Water and Wastewater)

INTRODUCTION AND QUALIFICATIONS

Q: **ARE YOU THE SAME PERRY BROWN WHO PROVIDED THE REBUTTAL STATEMENT CUPA STATEMENT 2-R?**

A: Yes.

Q: **OCA WITNESS SHERWOOD REQUESTED CUPA UPDATE ITS RATE CASE EXPENSE. COULD YOU PLEASE PROVIDE AN UPDATE?**

A: Yes. Legal services and consulting services billed as of September 6, 2021 amount to $181,414.46. For ongoing settlement negotiations, briefs, exceptions, and compliance we estimate an additional legal $50,000 in costs and $15,390 in consulting costs. Other professional services billed as of September 6, 2021 amount to 246,774. See also **CUPA Exhibit PB-1RJ.**

Q: **HOW DO THESE UPDATED COSTS IMPACT THE REVENUE REQUIREMENT FOR WATER AND WASTEWATER?**

A: For water, this brings the revenue requirement to $752,106 and for wastewater 992,203.

Q: **DOES THIS CONCLUDE YOUR PREPARED REJOINDER TESTIMONY?**

A: Yes.

Baker Tilly Municipal Advisors, LLC
8365 Keystone Crossing Suite 300
Indianapolis, IN 46240 • (317) 465-1500

Mr. Perry Brown, Financial Planning and Analysis Manager
Corix Group of Companies
Mid-Atlantic Operations
500 W Monroe St, Ste 3600
Chicago, IL 60661-3779

perry.brown@uiwater.com

Invoice Date:	September 6, 2021
Invoice Number:	BTMA11071
Client Number:	157442

INVOICE	**AMOUNT**
Fees	
For professional services rendered in connection with the Company's rate case currently pending before the Pennsylvania Public Utility Commission. The fees payable reflect time and expense incurred through September 5, 2021 and are billed pursuant to the engagement letter dated December 21, 2020.	
Cost of Service Study and Direct Testimony	$18,000.00
Discovery, Other Party Review, Rebuttal, Rejoinder, Hearing Prep	$9,955.00
Fees Total:	$27,955.00
Expenses Total:	$0.00
Invoice Total:	**$27,955.00**

For questions, comments or suggestions, please contact Scott Miller at (317) 465-1500.

Balance is payable upon receipt or previously agreed upon terms.

Please ACH or wire payment to:	**Or send payment to:**	**Reference:**
US Bank, Milwaukee, WI Routing No: 075000022 Account No: 182380578936 Reference #: BTMA11071	Baker Tilly Municipal Advisors, LLC PO Box 957915 St. Louis, MO 63195-7915	Client Number: 157442 Invoice Number: BTMA11071 Amount Enclosed: $_____

Project Name: 2021 COS (CUPA)
Date: September 6, 2021
Invoice # BTMA11071

Date	Staff Name	Description	Hours
12/15/20	Hadler, Scott	Kickoff meeting	0.75
12/15/20	Holliday, Courtney	Kickstart meeting, reviewing previous report and data requests	0.75
12/15/20	Miller, Scott	Kickoff meeting with staff	0.50
12/16/20	Holliday, Courtney	Proofing and sending data request for review	0.25
12/21/20	Miller, Scott	Finalize and send agreement	0.50
01/13/21	Hadler, Scott	Data request	1.00
03/05/21	Miller, Scott	Working group emails	0.25
03/10/21	Hadler, Scott	Discuss rate design	1.00
03/10/21	Hadler, Scott	Consumer study	0.75
03/10/21	Holliday, Courtney	Working group meeting, planning next steps and timeline, reviewing prior year report and cost of service database	1.50
03/10/21	Miller, Scott	Working group meeting and related prep and follow up re status of case	1.00
03/11/21	Hadler, Scott	Consumer study	3.00
03/11/21	Holliday, Courtney	Questions regarding cost of service database and information received	0.50
03/12/21	Hadler, Scott	Consumer study	0.50
03/12/21	Holliday, Courtney	Working on sewer database and report schedules	4.75
03/12/21	Miller, Scott	Discuss status and next steps with S. Hadler	0.25
03/15/21	Hadler, Scott	Consumer study	0.50
03/16/21	Holliday, Courtney	Updates to report and determining next steps	1.75
03/17/21	Hadler, Scott	Discuss outstanding items	0.25
03/17/21	Holliday, Courtney	status update internal meeting	0.25
03/17/21	Miller, Scott	Status update with staff	0.25
03/18/21	Holliday, Courtney	Preparing portion of schedules and sending to Scott for review, updating water pivot tables to tie out consumer study	1.50
03/19/21	Hadler, Scott	Cost of service studies	3.50
03/19/21	Holliday, Courtney	Updates to databases and report schedules	1.50
03/19/21	Miller, Scott	Review equivalent bill schedules and send to working group	0.50
03/22/21	Holliday, Courtney	Updating COS with preliminary pro forma numbers	1.50
03/23/21	Hadler, Scott	Cost of service study	2.00
03/25/21	Miller, Scott	Working group emails	0.25
03/26/21	Hadler, Scott	Review pro forma information	1.00
03/26/21	Holliday, Courtney	Updating COS report for new pro forma numbers received and adding Tamiment flow rate	2.25
03/29/21	Miller, Scott	Status updates	0.25
03/31/21	Holliday, Courtney	Looking into data received and updating pro forma report	1.00
04/01/21	Hadler, Scott	Cost of service study	1.25
04/01/21	Holliday, Courtney	Discussing questions with Scott	0.50
04/02/21	Holliday, Courtney	working on report	1.25
04/05/21	Holliday, Courtney	Updating sewer rate report and proofing	3.00
04/06/21	Holliday, Courtney	Working on water cost of service	3.50
04/06/21	Miller, Scott	Review Sewer COS	1.25
04/07/21	Hadler, Scott	Cost of service study	3.25

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Project Name: 2021 COS (CUPA)
Date: September 6, 2021
Invoice # BTMA11071

bakertilly

Date	Staff Name	Description	Hours
04/07/21	Holliday, Courtney	Discussion with Scott and Scott regarding sewer report, updating sewer and water reports	4.50
04/07/21	Miller, Scott	Review Sewer COS	2.00
04/08/21	Hadler, Scott	Cost of service study	3.00
04/08/21	Holliday, Courtney	Updating sewer report for Scott's comments, updating water report for Scott's comments, sending questions to utility	2.75
04/08/21	Miller, Scott	Review Water COS	1.50
04/09/21	Hadler, Scott	Cost of service study	1.00
04/09/21	Holliday, Courtney	Updates to both cost of service studies due to changes in pro forma numbers	1.50
04/09/21	Miller, Scott	Review and finalize draft COS reports	2.50
04/12/21	Holliday, Courtney	Updating reports	1.25
04/12/21	Miller, Scott	Review case status, working group emails and finalize reports	0.75
04/12/21	Miller, Scott	Phone with P. Brown	0.25
04/13/21	Miller, Scott	Review status of case	0.25
05/24/21	Miller, Scott	Working group emails re testimony prep	0.25
06/01/21	Miller, Scott	Draft CUPA testimony	2.00
06/02/21	Miller, Scott	Draft CUPA testimony	4.50
06/03/21	Miller, Scott	Testimony updates	0.25
06/08/21	Miller, Scott	Emails re testimony	0.25
06/11/21	Miller, Scott	Review testimony revisions and related emails	0.25
		Sub-Total - Cost of Service Study and Direct Testimony	**78.25**

Date	Staff Name	Description	Hours
04/28/21	Holliday, Courtney	Reviewing data request questions and looking into filing template	1.25
05/05/21	Miller, Scott	Review discovery questions and discuss with C. Holliday	0.75
05/06/21	Miller, Scott	Review files and discovery request	2.25
05/07/21	Holliday, Courtney	Researching data request questions and working group call to discuss questions	1.00
05/07/21	Miller, Scott	Working group call and related re discovery request	1.00
05/09/21	Miller, Scott	Revise COSS and respond to discovery request	1.00
05/14/21	Holliday, Courtney	Discussion with Scott regarding cost of service updates	0.25
05/14/21	Miller, Scott	Revisions to Water and Sewer reports for new revenue requirements	4.00
05/17/21	Hadler, Scott	Discuss data request	1.00
05/17/21	Miller, Scott	Revisions to COSs for new revenue requirements	2.00
05/20/21	Miller, Scott	Research and respond to discovery questions	1.25
05/21/21	Miller, Scott	Working group emails re discovery	0.25
06/22/21	Miller, Scott	OCA discovery request - clean up Excel files and post to Teams	1.00
07/12/21	Miller, Scott	Emails re hearing schedule	0.25
07/16/21	Miller, Scott	Emails re discovery	0.25
07/22/21	Miller, Scott	Emails re discovery	0.25

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Project Name: 2021 COS (CUPA)
Date: September 6, 2021
Invoice # BTMA11071

Date	Staff Name	Description	Hours
08/13/21	Miller, Scott	Begin review of rebuttal case	1.00
08/16/21	Miller, Scott	Review other party testimony, rebuttal prep and discovery prep	1.00
08/17/21	Miller, Scott	Rebuttal planning meeting	0.75
08/24/21	Hadler, Scott	Billing info/rebuttal testimony	1.25
08/24/21	Miller, Scott	CUPA rebuttal research and planning	1.00
08/24/21	Miller, Scott	Discussion with S. Hadler, A. Dickson and P. Brown re rebuttal testimony	0.75
08/25/21	Miller, Scott	Working group emails	0.25
08/25/21	Miller, Scott	Review and comment on Dickson rebuttal testimony	1.25
08/31/21	Miller, Scott	Working group emails re hearing prep	0.25
09/01/21	Miller, Scott	Working group emails	0.25
09/03/21	Miller, Scott	Working group emails re surrebuttal testimony and hearing prep	0.75
09/04/21	Miller, Scott	Working group emails re rejoinder testimony	0.25
09/04/21	Miller, Scott	Review and comment on rejoinder	1.00
		Sub-Total - Discovery, Other Party Review, Rebuttal, Rejoinder, Hearing Prep	**27.50**
		Total Hours	**105.75**

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Hawke McKeon & Sniscak LLP
ATTORNEYS AT LAW

100 North Tenth Street
Harrisburg, PA 17101
Phone: 717-236-1300
E-mail: dlkortright@hmslegal.com

Federal ID No. 23-2194794

CUPA Exhibit PB-1RJ

Allen Wilt
Utilities, Inc.
Corix Group of Companies
500 W Monroe Street, Suite 3600
Chicago, IL 60661

September 10, 2021
Matter No. 1257.0012

Re: 2021 Rate Case

Date	Statement Number	Amount Billed
12/09/2020	201387	$ 1,940.00
01/29/2021	210033	$ 687.50
03/31/2021	210300	$ 605.00
04/30/2021	210424	$ 657.50
05/31/2021	210555	$ 4,010.00
06/30/2021	210659	$19,932.50
07/31/2021	210763	$24,140.00
08/30/2021	210857	$ 5,780.75
09/07/2021	210876	$28,533.71
09/07/2021	210877	$ 8,642.50
	Total Billed	$94,929.46

To ensure proper credit, please include account number and invoice number on remittance checks
Please use the following web address to make payments securely using your credit card or bank account:
https://secure.lawpay.com/pages/hawkemckeonsniscak/operating

CUPA WW STATEMENT NO. 4-RJ
September 7, 2021

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025207

REJOINDER TESTIMONY

OF

ANDREW DICKSON

SEWER RATE DESIGN

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

DOCKET NO. R-2021-3025207

Rejoinder Testimony of Andrew Dickson

INTRODUCTION AND QUALIFICATIONS

Q: PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A: My name is Andrew Dickson. I am a Senior Financial Analyst for Corix Regulated Utilities (US) Inc. ("CRUI"), formerly known as Utilities, Inc.[1] which changed its name to CRUI and its subsidiaries. Community Utilities of Pennsylvania, Inc. ("CUPA" or "the Company") is a wholly owned subsidiary of UI. My business address is 500 W Monroe Street, Suite 3600, Chicago, IL 60661.

Q: ARE YOU THE SAME ANDREW DICKSON WHO SPONSORED DIRECT TESTIMONY IN THIS PROCEEDING?

A: Yes.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: The purpose of my testimony is to respond to certain issues discussed in the surrebuttal testimony of I&E witness Mr. Esyan Sakaya (I&E Statement No. 3SR). I also respond to certain issues raised in the surrebuttal testimony of OCA witness Mr. Jerome Mierzwa (OCA Statement No. 3SR) and OSBA witness Mr. Brian Kalcic (OSBA Statement No.

[1] Utilities, Inc. changed its name to Corix Regulated Utilities (US) Inc. effective July 25, 2019.

1SR). Namely, I will address the proposed consolidation of rates for Tamiment and the reasonableness of CUPA's proposed rates.

Q: ARE THERE ANY ATTACHMENTS TO YOUR REJOINDER TESTIMONY?

A: No.

Q: DO YOU HAVE A RESPONSE TO MR. SAKAYA'S RECOMMENDATIONS FOR SEWER RATES, AS HE STATES "THE 44.2% INCREASE IS APPROXIMATELY THE SAME 41.5% INCREASE PROPOSED FOR THE CONSOLIDATED RESIDENTIAL FLAT RATE CUSTOMER. THIS RECOMMENDATION WILL LESSEN THE IMPACT TO TAMIMENT CUSTOMERS WHILE PRODUCING A REASONABLE AMOUNT OF REVENUE FROM AVAILABILITY CHARGES (I&E EX. 3, SCH. 6, LINE 9, COLUMN K)" (I&E STATEMENT NO. 3-SR AT 10)?

A: Mr. Sakaya's recommendation does little to nothing to alleviate the inequities in CUPA's existing design. This is the primary concern raised when across-the-board increases are proposed, especially in light of clear cost-of-service results that contradict the ultimate outcome of those across-the-board changes. This is the case with the Tamiment availability charge, with which Mr. Sakaya takes issue. The fact that this rate has been proposed to increase at a faster rate than the consolidated residential flat rate customer is emblematic of the subsidization that these availability customers would experience if corrections to the rate structure are not made. Mr. Sakaya provides no evidence that his proposed rates produce "a reasonable amount of revenue from availability charges", as Mr. Sakaya does not compare recovery from these customers to their cost-of-service defined level. CUPA's proposed rates are a direct cost-of-service outcome, assigning costs to rates using the same methodology as the way those costs were allocated. Mr. Sakaya's proposal necessarily under recovers the reasonable amount of revenue from availability charges, as defined in CUPA's cost-of-service study. Mr. Sakaya's belief that "an increase of 200.1% when the system

average increase is approximately 37.4% is too large and must be reduced to lessen the impact to these customers" does not make it factual.

Q: DO YOU HAVE A RESPONSE TO MR. SAKAYA'S STATEMENT "THE FACT THAT THIS RATE WAS UNCHANGED FOR OVER TEN YEARS SIMPLY INDICATES THAT THE REVENUE FROM THIS RATE AND OTHER RATES ALLOWED CUPA TO MEET ITS REVENUE NEEDS OVER THAT TIME. THE FACT THAT CUPA PROPOSED NO INCREASE TO THE AVAILABILITY RATE FOR OVER TEN YEARS SIMPLY DOES NOT SUPPORT A 200.1% INCREASE IN ONE STEP FOR AVAILABILITY CUSTOMERS" (I&E STATEMENT NO. 3-SR AT 12)?

A: CUPA has not owned Tamiment for 10 years. Mr. Sakaya may not be aware of the fundamental facts in this case, such as when Tamiment was acquired by CUPA, and who designed Tamiment's existing rates. CUPA has not met its revenue needs over time from Tamiment since obtaining ownership in 2019, which is a driver for this ongoing case.

Q: DO YOU AGREE WITH MR. SAKAYA THAT CUPA'S PROPOSED AVAILABILITY CHARGE IS NOT SUPPORTED BY CUPA'S COST OF SERVICE STUDY (I&E STATEMENT NO. 3-SR AT 12)?

A: No. Similar to Mr. Sakaya's fundamental misunderstandings of the value provided by CUPA's water cost of service study, here he repeats the same fallacies. CUPA has used the same allocation basis of 0.25 for availability customers that it has used historically to allocate costs for availability bills for its sewer service. Because this is the allocation basis for allocation of costs, it is the most reasonable basis for rate development as well, and complies with the best practice in cost allocation and rate design of consistency. CUPA clearly allocates and develops rates in CUPA WW Exhibit AWD-1 consistent with the manner in which costs have been allocated in its cost-of-service study, assigning 0.25 (25%) of the equivalent meter costs for treatment and disposal to

availability bills and 0.25 (25%) of the equivalent meter costs for collection system, as well. The billing component is treated on a one-for-one basis, as CUPA's costs to send bills to availability customers is much the same as it is for any other customer. The "proper analysis" Mr. Sakaya states CUPA failed to perform is CUPA's WW Exhibit SAM-1, and it clearly supports CUPA's availability charge as designed.

Q: DO YOU HAVE COMMENTARY SURROUNDING THE SCALEBACK OF RATES?

A: Yes. Rates should be scaled back or otherwise altered to meet the ordered revenue requirement uniformly by equivalent meter (as defined in CUPA's cost-of-service study). Mr. Sakaya denies that a class cost-of-service study has been performed. However, CUPA's cost-of-service study identifies only the one class; that of CUPA customer. Separate rates are developed for those customers, based on their underlying units (i.e., equivalent meters or pupils), but in essence, there is only one class. The return by class as proposed by CUPA is the same for each customer group, and is the same as the entire sewer system. Should any modifications be made to the revenue requirement, an analysis of where those costs would be functionalized could be performed (treatment/disposal, collection system, or billing/customer). However, this is unlikely to provide additional value beyond simply adjusting the cost per equivalent meter, as treatment/disposal and collection system costs are the bulk of CUPA's revenue requirement. Therefore, to save customer rate case expense that might be incurred from necessitating such an analysis, CUPA proposes that the charge per equivalent meter as calculated in CUPA WW Exhibit AWD-1 be adjusted to recover CUPA's allowed revenue requirement. CUPA's position here has been consistent throughout testimony. However, it appears there is some latent confusion, which this testimony serves to address. As stated in my rebuttal testimony (CUPA WW Statement No 4-R at 7:5-7), "it is CUPA's position that, to the extent possible, customers should pay rates that best reflect how those customers impose costs on CUPA's sewer system", which has been clearly identified in CUPA's cost-of-service study.

Q: DO YOU HAVE COMMENTARY SURROUNDING MR. MIERZWA'S ASSERTION THAT "MR. DICKSON'S CLAIM IS NOT ACCURATE" REGARDING HIS CHIEF COMPLAINTS ABOUT CUPA'S PROPOSED RATE DESIGN (OCA STATEMENT NO. 3SR AT 8)?

A: Yes. Mr. Mierzwa alleges my statements have mischaracterized his chief complaints with CUPA's sewer rate design. Specifically, Mr. Mierzwa does not agree that gradualism is a chief concern of his here. However, CUPA notes that Mr. Mierzwa proposed a partial consolidation only of Tamiment's availability charges, directly citing his gradualism measure (ratio relative to the system average increase) (OCA Statement No. 3 at 13). This is the statement to which I was referring. Mr. Mierzwa makes no revision to this statement, so gradualism does appear to be a concern for Mr. Mierzwa with respect to the Tamiment availability charge, still, regardless of whether this is a 'chief complaint' or a lesser one.

Q: DO YOU HAVE ANYTHING TO ADD TO MR. MIERZWA'S STATEMENT "FLAT RATES PROVIDE CUSTOMERS WITH AN UNLIMITED MINIMUM USAGE ALLOWANCE. THAT IS, CUSTOMERS CAN USE AN UNLIMITED AMOUNT OF WASTEWATER SERVICE WITHOUT BEING ASSESSED ADDITIONAL CHARGES" (OCA STATEMENT NO. 3SR AT 9:14-16)?

A: An unlimited minimum usage allowance is not a usage allowance at all, thus I fundamentally disagree with Mr. Mierzwa's slippery-slope argument made here. Wastewater volumes are closely tied to water volumes, so much so that many rate designers, including Mr. Mierzwa, suggest using water volumes to develop volumetric sewer rates. CUPA charges volumetric water rates, and as such, the total volume that a

customer uses is generally still charged per unit, only through water rates. Mr. Mierzwa's arguments against minimum allowances are not relevant to sewer service. It would be particularly uncommon to establish an allowance in a sewer rate design. I cannot speak to Commission policy regarding minimum allowances, as Mr. Mierzwa attempts to. However, my experience designing rates across the country, from West to East, is that flat charges for sewer service are commonplace, and generally do not provide perverse incentives regarding conservation (which would be the primary concern surrounding non-usage based designs). CUPA does not have significant effluent dischargers at this time for whom such a rate would be impactful on their behaviors.

Q: DO YOU HAVE ANYTHING TO ADD TO MR. MIERZWA'S STATEMENT "…IT WOULD BE CONFUSING TO TAMIMENT CUSTOMERS IF THEY WERE MOVED TO A FLAT RATE IN THIS PROCEEDING ONLY TO BE MOVED BACK TO METERED RATES IN THE NEXT PROCEEDING, AS MR. DICKSON SUGGESTS CUPA MAY CONSIDER" (OCA STATEMENT NO. 3SR AT 9:21-24)?

A: First, the outcome of this proceeding should not be determined based on what may or may not be the outcome of CUPA's future rate case. There is no outstanding order clarifying any path that CUPA must follow in future rate case filings.

Second, it would be less confusing for Tamiment customers to have the same rates as all other CUPA customers than to maintain separate tariffs, whereby current CUPA customers and Tamiment customers alike will have resulting questions about which rates apply to them, and why not their peers. CUPA's proposal has been made to minimize the number of customers experiencing rate structure changes to avoid this very confusion.

What may be considered in future proceedings is not relevant to the current question of what tariff or tariffs should exist for CUPA customers as an outcome of this proceeding.

Q: DO YOU AGREE TO MR. MIERZWA'S STATEMENT "IN ITS NEXT BASE RATE CASE, AS PART OF THE REQUIREMENT THAT CUPA PROPOSE METERED RATES (MADE UP OF FIXED AND VOLUMETRIC CHARGES) FOR UTILITIES INC. OF PENNSYLVANIA AND PENN ESTATES CUSTOMERS, CUPA SHOULD PROVIDE A COST OF SERVICE STUDY THAT ASSIGNS COSTS TO CUSTOMER CLASSES BASED ON FLOW REQUIREMENT" (OCA STATEMENT NO. 3SR AT 10:3-7)?

A: CUPA agrees to provide a cost-of-service study that assigns costs to customer classes based on flow requirements in its next case, provided that recovery of the rate case expense to have such a study performed will be recovered in full. However, CUPA objects to any requirement that it propose metered rates for sewer service – CUPA will consider such rates, but will propose a rate design that it deems most appropriate based on the facts and circumstances present then, and will prove the justness and reasonableness of its decisions to the Commission in that proceeding. Further, CUPA reiterates that it will not obtain water data for customers that it does not meter, as this process would be exceptionally burdensome and expensive if even possible at all, and would impose administrative burden and expense that CUPA customers would have to bear.

Q: DO YOU HAVE COMMENTARY ON MR. MIERZWA'S STATEMENT "IN A GUIDE TO UTILITY RATEMAKING, PUBLISHED BY THE PUBLIC UTILITY COMMISSION AND AUTHORED BY TWO COMMISSIONERS, AT PAGE 151 IT STATES: "THE COMMISSION'S POLICY IS TO REQUIRE THE INSTALLATION OF

METERS AND SET USAGE RATES TO ENCOURAGE CONSERVATION." THE INTERNAL CITATION IS TO PA. CODE § 65.7. SEE ALSO 52 PA. CODE § 65.20(6). THE COMMISSION'S POLICY TO ENCOURAGE CONSERVATION BY MOVING CUSTOMERS TO METERED, USAGE-BASED RATES IS ALSO REFLECTED IN COMMISSION ORDERS" (OCA STATEMENT NO. 3SR AT 10)?

A: It is CUPA's opinion that Mr. Mierzwa's citation is of a portion of the referenced document relevant only to water charges. Moreover, the Commission's regulation and policy statement that he references clearly only apply to water service. It would be particularly abnormal to discuss conservation in the context of sewer service, as would the requirement to install meters – very few sewer customers across the country have sewer meters. As such, it appears clear to CUPA that the cited text is a reference to water service, not sewer service, and is not applicable to this discussion of sewer rates.

Q: CAN YOU RESPOND TO MR. MIERZWA'S STATEMENT "MR. DICKSON FAILS TO EXPLAIN WHY AN AVERAGE INCREASE OF 19% IS APPROPRIATE FOR THE AVERAGE TAMIMENT RESIDENTIAL CUSTOMER WHEN AN AVERAGE INCREASE OF 104% IS REQUIRED TO RECOVER THE COST OF SERVICE" (OCA STATEMENT NO. 3SR AT 11)?

A: CUPA's cost-of-service study has been designed based on full consolidation of the Tamiment service territory, and rates have been designed accordingly. CUPA is not proposing to charge Tamiment customers separate rates, as is Mr. Mierzwa. Tamiment is indeed experiencing benefits from consolidation here. It is appropriate to consolidate Tamiment with the rest of CUPA for the same reasons CUPA became a consolidated utility in the first place; small systems will occasionally require investments (in this case,

Tamiment is this system) that would greatly exacerbate the required revenue from those small geographies. Consolidation allows for those costs to be shared amongst a group of customers in various geographies, ensuring that rate changes are more incremental in nature, and that system improvements can proceed as needed rather than as able to be afforded. Investments in Penn Estates and Utilities Inc. of Pennsylvania are similarly shared with Tamiment customers. The 104% increase that would be necessary for a stand-alone Tamiment system has a much smaller impact when applied to the consolidated CUPA system, as denoted by the overall system increase needed well below this 104% level. CUPA need not relitigate the merits of consolidation in general in this case – it is clearly in Tamiment's best interest to be consolidated with CUPA, and it will ultimately be in CUPA's best interest to have a broader customer base over which to share future investment costs.

Q: CAN YOU COMMENT ON MR. MIERZWA'S STATEMENT "IN THE LONG RUN, THE REDUCED DEMANDS FOR SERVICE WILL LIKELY REDUCE CUPA'S COST OF PROVIDING WATER AND WASTEWATER SERVICES BY REDUCING FUTURE CAPITAL EXPENDITURES AND OPERATING COSTS", WHICH HE MAKES IN HIS DISCUSSION OF INTRODUCING VOLUMETRIC RATES (OCA STATEMENT NO. 3SR AT 11:17-19)?

A: Demand for water and sewer service is particularly inelastic, which is a thoroughly observed phenomenon across water and sewer service providers throughout the country, and thoroughly discussed in the industry's body of literature. Conservation-based rates generally require significant changes between tiers to be impactful, and still the rate of change in demand is far slower than the change in rates. Generally, discussions

1 surrounding conservation are applicable only to water service due to the nature of the
2 service that utilities wish to discourage; namely, outdoor use. Indoor use is commonly
3 viewed as essential usage, for activities like bathing, handwashing, and cooking. CUPA
4 has no desire to make these activities more expensive for their customers than necessary
5 and would be particularly irresponsible given the current pandemic context. Water that
6 could be conserved is elective water use, for activities like watering lawns or filling pools.
7 While I agree that encouraging conservation has the potential to reduce the required capital
8 investments that CUPA may need to make for its water system in the future (although I
9 reiterate that demand for water service is inelastic), it is not likely that influent volumes
10 could be significantly altered. It is nonsensical to discuss conservation in the context of
11 sewer flows for a utility like CUPA.

12 Q: CAN YOU COMMENT ON MR. MIERZWA'S STATEMENT "ALTHOUGH CUPA
13 HAS NOT PROPOSED A CAP FOR ITS WATER LOW-INCOME PROGRAM, A CAP
14 WOULD BE EQUALLY UNSUPPORTED AND PREMATURE" (OCA STATEMENT
15 NO. 3SR AT 13)?

16 A: While not relevant to sewer service, CUPA has proposed a cap for its low-income
17 water rate. That cap is the average residential usage, at 3,500 gallons per bill. This is
18 clearly stated in CUPA W Exhibit AWD-2. Further, a usage cap at the average usage per
19 residential bill is fully supported and is not premature; it is a protective measure to
20 discourage arbitrage and other suboptimal price responses, protecting regular residential
21 customers from bearing any additional burden from supporting their low-income peers.
22 Eliminating this cap would be unsupported and premature, as it eliminates a rational
23 measure to guide demands eligible for the low-income rate.

Q: DOES THIS CONCLUDE YOUR PREPARED REJOINDER TESTIMONY?

A: Yes, although I reserve the right to update it if necessary due to any new or updated information.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3025206 & R-2021-3025207

CUPA Statement No. 5-RJ

Rejoinder Testimony of

Dylan W. D'Ascendis, CRRA, CVA

on behalf of

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

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I. INTRODUCTION, PURPOSE, AND SUMMARY

Q. Please state your name and business address.

A. My name is Dylan W. D'Ascendis. I am a Partner at ScottMadden, Inc. My business address is 3000 Atrium Way, Suite 200, Mount Laurel, NJ 08054.

Q. Are you the same Dylan W. D'Ascendis who provided Direct and Rebuttal Testimonies in this proceeding?

A. Yes, I am.

Q. What is the purpose of this Rejoinder Testimony?

A. The purpose of this Rejoinder Testimony is to provide testimony on behalf of Community Utilities of Pennsylvania, Inc., ("CUPA" or the "Company") in response to certain aspects of the surrebuttal testimonies of Mr. Christopher Keller, witness for the Pennsylvania Public Utility Commission's ("PA PUC" or the "Commission") Bureau of Investigation and Enforcement ("I&E") and Mr. Noah D. Eastman, witness for the Pennsylvania Office of Consumer Advocate ("OCA") (collectively referred to as the "Opposing Witnesses") as they pertain to CUPA's allowed return on common equity ("ROE"), which the Company should have the opportunity to earn on its authorized jurisdictional rate base.

Q. Please summarize your Rejoinder Testimony.

A. My Rejoinder Testimony addresses certain aspects of the Opposing Witnesses' surrebuttal testimonies. Because rejoinder testimonies are limited in scope, I will only address new arguments made by the Opposing Witnesses and cite to my Direct and Rebuttal Testimonies as appropriate. After reviewing the Opposing Witnesses' surrebuttal testimonies, nothing has caused me to change my recommended ROE of 10.35%, which remains reasonable.

II. RESPONSE TO THE SURREBUTTAL TESTIMONY OF I&E WITNESS KELLER

Q. Please summarize Mr. Keller's surrebuttal testimony.

A. Mr. Keller discusses the following in his surrebuttal testimony: (1) that calculations for the ROEs in this proceeding and the ROE for the distribution system improvement charge ("DSIC") should be different; (2) that he did not rely entirely on the results of his discounted cash flow ("DCF") model for his recommended ROE; (3) that the DCF is more reliable than any other model when estimating the ROE; (4) that the DCF does not misstate the investor-required return when market-to-book ("M/B") ratios are not at unity; (5) that he maintains the yield on a 10-year Treasury bond is the appropriate risk-free rate in a capital asset pricing model ("CAPM") analysis; (6) that projections of interest rates should only be used during the period when rates are expected to be in effect; (7) that the empirical CAPM ("ECAPM") is inappropriate for cost of capital purposes; (8) that he maintains the ROE for the Company should not be adjusted due to its smaller relative size; and (9) that my non-utility proxy group should not be considered.

A. DISTRIBUTION SYSTEM IMPROVEMENT CHARGE ROE

Q. Mr. Keller states that the PA PUC Bureau of Technical Utility Services ("BTUS") determines the DSIC ROE differently than what the PA PUC I&E does in rate cases.[1] Please respond.

A. I agree with Mr. Keller that the PA PUC BTUS determines its DSIC ROE differently than Mr. Keller does in his analysis, but I do not agree that the ROE calculated reflects risk different than the risks facing water and wastewater utilities.

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[1] Keller Surrebuttal Testimony, at 4.

As Mr. Keller states, the DSIC is designed to encourage utilities to replace aging infrastructure between rate cases, but the goal of the PA PUC BTUS' calculation of the DSIC ROE is to determine the required equity return for utility investments, which is the same assignment tasked to us in this proceeding.

Q. How does the PA PUC determine the DSIC ROE?

A. The BTUS Report on the Quarterly Earnings of Jurisdictional Utilities for the year ended March 31, 2021 states in Attachment D that "*The Commission determines the ROE used for DSIC purposes* based on the range of reasonableness from the DCF barometer group data, CAPM data, recent ROEs adjudicated by the Commission and informed judgment."[2] From this information and information in subsequent attachments, the BTUS correctly relies on multiple analytical models and qualitative factors in determining the DSIC ROE. This is in stark contrast to Mr. Keller's determination of the ROE for CUPA, which narrowly applied the DCF model, eliminated CAPM results, and provided no meaningful qualitative analysis regarding CUPA's operations compared to his proxy group. Because of the way Mr. Keller conducted his analysis, his recommendation understates the Company's ROE.

B. SOLE RELIANCE ON THE DCF MODEL

Q. Does Mr. Keller recognize the fact that all cost of equity models, including the DCF, have limitations?

A. Yes, he does. Mr. Keller states that "I have considered the fact that no method can perfectly predict the return on equity" and that "…no one method can capture

[2] Pennsylvania Public Utility Commission, Bureau of Technical Utility Services, Report on the Quarterly Earnings of Jurisdictional Utilities for the Year Ended March 31, 2021, July 15, 2021.

every factor that influences an investor…",[3] but does not rely on any other model besides the DCF for his recommendation. Clearly, Mr. Keller's sole reliance on the DCF model is at odds with his understanding of the value in considering multiple models to estimate the ROE.

Q. Did you discuss the importance of using multiple models in an ROE analysis?

A. Yes, I did. My review of financial literature and PA PUC Orders supporting the use of multiple models in an ROE analysis is contained on pages 7 through 11 of my Rebuttal Testimony.

Q. Mr. Keller states that investors should know that rates are set on book value, and as such DCF cost rates do not misstate the ROE for companies with M/B ratios different than 1.0.[4] Please comment.

A. First, it is important to note that Mr. Keller acknowledges that the results of the DCF model are set by market rates and that the ROE is set based on book value. My assertion is not that investors are unaware that rates are set at book value, it is that investors invest on market value and require market returns. Because market values and book values differ for utilities, the indicated ROE using the DCF (which uses market prices) will misstate the investor-required return, as discussed in my Rebuttal Testimony.[5]

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3 Keller Surrebuttal Testimony, at 6.
4 Keller Surrebuttal Testimony, at 9.
5 D'Ascendis Rebuttal Testimony, at 11-17.

1 **C. APPLICATION OF THE CAPM**

2 **Q. Mr. Keller states when selecting a risk-free rate for a CAPM analysis, one**
3 **should consider maturity risk and inflation risk.[6] Do you agree?**

4 A. No, I do not. As discussed in my Rebuttal Testimony,[7] the tenor of the risk-free
5 rate used in the CAPM should match the life (or duration) of the underlying
6 investment. Because of this, the yield on the 30-year Treasury bond is the
7 appropriate measure for the risk-free rate. As to inflation risk, the coupon and face
8 amount of a U.S. Treasury bond is assumed to be guaranteed, which means the
9 hypothetical investor would not experience inflation risk as long as they held the
10 bond until maturity. Mr. Keller's considerations regarding maturity and inflation risk
11 should be dismissed by the Commission.

12 **Q. Do you agree with Mr. Keller's contention that the time period reflected in a**
13 **projected risk-free rate should include the period in which the rates will be**
14 **in effect?[8]**

15 A. Mr. Keller seems to misunderstand investors vs investments. Investors will enter
16 and exit investments; however the actual investment is a long-term prospect and
17 is expected to be outstanding into perpetuity. Because of this, the risk-free rate
18 projections used for a cost of equity analysis should be using the longest time
19 frame available. Considering the source for five to 10-year projected interest yields
20 is a source Mr. Keller trusts (*i.e., BlueChip Financial Forecasts*), he should have
21 used them in his CAPM analysis.

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6 Keller Surrebuttal Testimony, at 10-11.
7 D'Ascendis Rebuttal Testimony, at 22-23.
8 Keller Surrebuttal Testimony, at 11.

Q. Does Mr. Keller advance any new arguments regarding the use of the ECAPM in his surrebuttal testimony?

A. No, he does not. As such, my rebuttal to his arguments stand as stated in my Rebuttal Testimony.[9]

D. FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE

Q. Mr. Keller continues to refute your size adjustment. Does he provide additional arguments in his surrebuttal testimony?

A. Yes, he does. Mr. Keller refutes Dr. Zepp's article refuting Dr. Wong's article. He reiterates that the size studies I used include non-regulated companies and refutes that the Commission accepted my 100-basis point size adjustment in the Citizens' Electric Company of Lewisburg, PA ("Citizens'") proceeding (Docket No. R-2019-3008212). Notably, Mr. Keller did not address my independent analysis linking size and risk for utilities using *Value Line* data.

Q. Did you analyze additional relationships between size and risk for utility companies?

A. Yes, I did. I also analyzed utilities' Safety Ranking, Financial Strength, Price Stability, and Earnings Predictability measures from *Value Line* for the utilities that comprise their Standard and Small & Mid Cap Editions and compared those measures to their respective market capitalizations.

Q. What did those analyses reveal?

A. Those analyses revealed the following:

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[9] D'Ascendis Rebuttal Testimony, at 24-27.

- As market capitalization increased, company Safety Ranking improved (significant at 95%);
- As market capitalization increased, company Financial Strength improved (significant at 90%);
- As market capitalization increased, company Price Stability improved (significant at 85%); and
- As market capitalization increased, earnings predictability increased (not statistically significant).

These measures, in addition to the analysis presented in my Rebuttal Testimony,[10] shows that size and risk are linked for utility companies, and the contention by the Opposing Witnesses that it (1) does not exist, or (2) does not apply to utility companies, should be dismissed by the Commission.

Q. Mr. Keller discusses that Dr. Zepp's conclusions regarding the size effect for utilities was only based on water companies.[11] Is CUPA a water company?

A. Yes, it is.

Q. Mr. Keller excerpts pages from the Ibbotson <u>Stocks, Bonds, Bills and inflation ("SBBI") 2015 Yearbook</u> which discusses small stocks' recent relative performance to large companies' returns.[12] Please respond.

A. As is shown in the <u>SBBI 2015 Yearbook</u>, one class of stock may outperform any other class of stock over any particular time period, but the key to the investor-required return is risk, or the standard deviation of those stocks, not the absolute

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10 D'Ascendis Rebuttal Testimony, at 31-32.
11 Keller Surrebuttal Testimony, at 15.
12 Keller Surrebuttal Testimony, at 15.

return. It is a fundamental concept of finance that the higher the risk, the higher required return. As shown in the SBBI 2021 Yearbook, the standard deviation of returns for small companies is 31.3%, which is markedly higher than large stocks (19.7%) over the period 1926-2020.[13] Since small companies' return outcomes are more uncertain than larger companies, investors will require larger returns for investing in those companies.

Q. Mr. Keller cites from the SBBI 2015 Yearbook when discussing some of his disagreements regarding the size adjustment. Does the SBBI 2021 Yearbook still contain the size premium?

A. Yes, it does.

Q. Did you claim that the Commission accepted your 100-basis point size adjustment in Citizens' last rate case?

A. No, I did not. I stated that the Commission considered the size of Citizens by awarding a DCF cost of common equity one standard deviation above the mean and median proxy group ROE, as calculated by Citizens'.

Q. What was the implied size adjustment for Citizens' in that proceeding?

A. Given the average of the mean and median DCF result of 8.27%, and the approved ROE of 9.49% (before adjustment for management efficiency), the Commission applied an implicit 122-basis point size adjustment for Citizens'. In view of the above and preceding, there is, indeed, a link between size and risk for utility companies and my specific risk adjustment is appropriate and conservative.

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[13] SBBI 2021 Yearbook, at 6-17.

1 **E. COMPARABLE EARNINGS**

2 **Q. Mr. Keller continues to reject your Non-Utility Proxy Group for use in**
3 **determining the ROE for CUPA.[14] Does Mr. Keller provide additional support**
4 **for his position in his surrebuttal testimony?**

5 A. Yes, he does. While it seems like Mr. Keller is still confused about my selection
6 criteria,[15] he notes that the non-utility companies may not be comparable to the
7 utility proxy group in the future, and that the use of non-utility proxy groups violate
8 *Hope* and *Bluefield*.[16]

9 **Q. Do you agree with Mr. Keller that non-utility companies comparable in risk**
10 **to the utility proxy group can change over time?**

11 A. Yes, I do. The cost of equity is a snapshot of the investor-required return at a date
12 certain, using current and expected market data. When market conditions change,
13 and company compositions change, both utility and non-utility companies may
14 cycle in and out of comparable groups. For example, in my Direct Testimony, I
15 included Essential Utilities, Inc. in my Utility Proxy Group, but eliminated them in
16 my updated analysis because they no longer met my selection criteria. The fact
17 of the matter is, at this time, the companies selected for the Non-Utility Proxy Group
18 are comparable to the Utility Proxy Group.

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14 Keller Surrebuttal Testimony, at 18-20.

15 I use ranges of unadjusted beta (which measure market risk) and the standard error of the regression (which measures non-market risk) to select my Non-Utility Proxy Group, and Mr. Keller only mentions beta in his surrebuttal testimony.

16 Keller Surrebuttal Testimony, at 18-20.

Q. In order to provide a more robust analysis, have you reviewed additional risk measures for each group?

A. Yes, I have. I compared the Safety Ranking, Financial Strength, Price Stability, and Earnings Predictability rankings from *Value Line* for each company in my Utility and Non-Utility Proxy Groups to determine whether these measures are similar.

Table 1: Comparative Measures of Risk – Utility and Non-Utility Proxy Groups[17]

	Safety Ranking	Financial Strength	Price Stability	Earnings Predictability
Utility Proxy Group Avg	3.00	B++	89.17	80.00
Utility Proxy Group Median	3.00	B++	87.50	87.50
Non-Utility Proxy Group Avg.	1.95	A	87.25	74.21
Non-Utility Proxy Group Median	2.00	A	87.50	80.00

As shown on Table 1, the Safety and Financial Strength measures for the Non-Utility Proxy Group are stronger (*i.e.,* less risky) than the Utility Proxy Group, and have similar measures for Price Stability and Earnings Predictability. These measures corroborate my initial evidence that shows the Utility and Non-Utility Proxy Groups are comparable in risk.

Q. Is it your opinion that the use of Non-Utility Proxy Groups violates the principles set forth in *Hope* and *Bluefield*, as represented by Mr. Keller's counsel?[18]

A. No. As discussed in my Direct Testimony,[19] using comparable risk companies to determine a cost of capital for a utility company is consistent with the "corresponding risk" standard in *Hope* and *Bluefield*. Whether the company is

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17 Source: *Value Line* Standard Edition.
18 Keller Surrebuttal Testimony, at 20.
19 D'Ascendis Direct Testimony, at 5.

regulated or not is not contemplated by the United States Supreme Court. While I do agree with Mr. Keller's lawyers that the return in this case should not be based on companies that are not of comparable risk, as discussed above and previously, I have shown that the companies that form my Non-Utility Proxy Group have comparable risk to the Utility Proxy Group, and in turn CUPA.

III. RESPONSE TO THE SURREBUTTAL OF OCA WITNESS EASTMAN

Q. Please summarize Mr. Eastman's surrebuttal testimony.

A. Mr. Eastman discusses the following in his surrebuttal testimony: (1) that I mischaracterized his testimony regarding his reliance on the DCF model results; (2) that his use of current interest rates is appropriate for cost of capital purposes; (3) that geometric mean market risk premiums ("MRP") are appropriate for cost of capital purposes; (4) that estimates of market returns from investment analysts are appropriate for cost of capital purposes; and (5) maintains that a size adjustment is not appropriate for cost of capital purposes.

A. SOLE RELIANCE ON THE DCF MODEL

Q. Mr. Eastman states that you misrepresented his testimony and that he did consider the CAPM in his analysis.[20] Please respond.

A. Mr. Eastman's recommended ROE is the result of his DCF model. While Mr. Eastman does reluctantly admit that the academic literature concerning the applicability of multiple models in my Rebuttal Testimony[21] is not "necessarily incorrect",[22] he does not include any other relevant analysis, quantitative or qualitative.

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20 Eastman Surrebuttal Testimony, at 2.
21 D'Ascendis Rebuttal Testimony, at 79.
22 Eastman Surrebuttal Testimony, at 2.

Q. Mr. Eastman states that PA PUC precedent prevents giving weight to other models besides the DCF.[23] Is he correct?

A. No, he is not. While the PA PUC does primarily base its authorized ROEs on DCF model results, they correctly consider the results of other cost of equity models and other qualitative factors, as shown in the Orders in Dockets R-2013-2360798 and R-2014-2402324, cited in my Rebuttal Testimony,[24] and in the PA PUC determination of the DSIC ROE, as mentioned above.

Q. Do you agree with Mr. Eastman's claim that you support considering multiple models to calculate the ROE because the DCF model mis-states the investor-required return when M/B ratios are not 1.0?[25]

A. Only in part. As discussed in my Rebuttal Testimony,[26] no one individual model provides the necessary precision, but each method provides useful evidence to facilitate informed judgment. Because of this, one should use multiple models to inform their decision.

B. APPLICATION OF THE CAPM

Q. Has Mr. Eastman provided any new evidence regarding his use of current interest rates in his CAPM analysis?

A. No, he has not. I have explained that the cost of capital and ratemaking are forward-looking, and as such, necessitates projected measures, including interest rates. Mr. Eastman does note that the interest rates used in his CAPM are not forward-looking.[27]

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23 Eastman Surrebuttal Testimony, at 2.
24 D'Ascendis Rebuttal Testimony, at 10-11.
25 Eastman Surrebuttal Testimony, at 3.
26 D'Ascendis Rebuttal Testimony, at 8.
27 Eastman Surrebuttal Testimony, at 4.

Q. Mr. Eastman says that although the arithmetic mean generates a more accurate projection of the required return for the next period, investors' investment horizons extend past the next period, necessitating the use of the geometric mean return.[28] Please respond.

A. Mr. Eastman is correct that the value produced by the arithmetic mean is the expected value for the next period, but since the arithmetic mean is the best estimate for <u>any given year</u>, it would be applicable to all future time periods. Mr. Eastman's concerns regarding the arithmetic mean should be dismissed.

Q. Has Mr. Eastman advanced any new arguments regarding the applicability of 10-year expected returns for the market from investment analysts?

A. Yes, he has. Mr. Eastman claims that the MRP in the CAPM is the <u>expected</u> return on the market less the risk-free rate, and that expected return could be estimated using the investment analysts' projections.

Q. Do you agree with Mr. Eastman?

A. No, I do not. Sometimes analysts interchange the terms "expected return" and "required return", and it is my opinion that this is the case in Mr. Eastman's example. As discussed in my Rebuttal Testimony,[29] expected returns are not equal to required returns, a fact in which Mr. Eastman agrees.[30]

Q. What are commonly accepted measures of the MRP for the CAPM?

A. The Chartered Financial Analyst ("CFA") Institute Research Foundation states:

> Approaches to estimating the ERP fall into three broad categories:
>
> 1. Methods based on a dividend discount model (DDM), earnings discount model, or cash-flow-to-the-investor

[28] Eastman Surrebuttal Testimony, at 5-6.
[29] D'Ascendis Rebuttal Testimony, at 46-47.
[30] Eastman Surrebuttal Testimony, at 6.

> discount model: forward-looking methods with their roots in discounted cash flow (DCF) analysis, wherein the value of an asset is regarded as the present value of the cash flows the asset is expected to generate.
>
> 2. Methods based on extrapolating past trends, in particular the spread between realized stock and bond or cash returns, into the future: retrospective methods.
>
> 3. Methods based on a macroeconomic model of the way that investors require compensation for risk.
>
> In past literature, these have been called, respectively, supply, equilibrium, and demand models.[footnote omitted] The DDM is a supply model because it focuses on ways that companies generate cash with which to reward investors. The macroeconomic model is a demand model because it asks what excess return investors need to induce them to take equity risk. The retrospective method can be regarded as an equilibrium model because it relies on prices at which the market actually traded, reflecting the intersection of supply and demand curves.[31]

None of the three commonly used ways to estimate the MRP involve reviewing investment analyst projections of returns on the market. In view of the above, expected returns published by investment analysts should not be considered a valid measure of the investor-required return on the market by the Commission.

C. <u>FAILURE TO REFLECT THE COMPANY'S GREATER RELATIVE RISK DUE TO ITS SMALL SIZE</u>

Q. Has Mr. Eastman advanced any new arguments supporting his decision not to include a size adjustment in his analysis?

A. Yes, he has. Mr. Eastman provided additional academic literature in support of his position, and notes that (1) CUPA does not access capital in the same manner as the Utility Proxy Group, and (2) following my logic, all operating subsidiaries of

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[31] CFA Institute Research Foundation, Literature Review, *The Equity Risk Premium: A Contextual Literature Review*, at 2.

holding companies would be riskier than the holding companies, all else equal.[32]

Q. Please comment on the Kalesnik and Beck article cited by Mr. Eastman as support.

A. Similar to Mr. Keller's reference to the 2015 SBBI Yearbook, the Kalesnik and Beck article focuses on returns, not standard deviations of returns. For example, the authors state that if the delisting bias (*i.e.*, if returns on delisted stocks were included in decile returns) was eliminated, the size premium would disappear, but if one kept the delisted stocks in those deciles, the standard deviation of the decile returns would increase markedly. As discussed previously, risk (as measured by the standard deviation) is what drives investor-required return. As such, the Kalesnik and Beck article should not be considered by the Commission.

Q. Do you agree that CUPA accesses capital differently than the members of the utility proxy group?

A. Yes, I do. CUPA, and its Parent, CORIX Regulated Utilities, Inc. ("CRU") are not publicly traded, nor is their debt rated by major rating agencies. As such, CUPA and CRU are exposed to significant liquidity risk compared to the Utility Proxy Group, on account of their small size. This is another reason why a size premium needs to be applied to CUPA's ROE in this proceeding.

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[32] Eastman Surrebuttal Testimony, at 7-8.

Q. Mr. Eastman states that the logic behind your size premium is flawed because the subsidiaries in your proxy group raise capital as consolidated entities.[33] Please respond.

A. As discussed in my Direct Testimony,[34] the cost of capital in regulatory proceedings are set on a stand-alone basis, which means the ROE must reflect the risk of the investment, not the source of the funds. Simply put, the operating company's risk is measured, and that risk (and return) would be the same regardless of ownership structure.

Q. Is it your position that individual subsidiaries of utility holding companies are riskier than the combined holding company due to their smaller size, all else equal?

A. Yes. This position is consistent with portfolio theory, which theorizes that owning a basket of risky securities is less risky than individual owners owning separate securities. Utility holding companies invest in individual operating utilities, all at their assumed individual levels of risk. As the utility holding company diversifies its holdings over several geographic and regulatory territories, the overall riskiness of the portfolio decreases even if some of the underlying individual securities are riskier than the portfolio. But this does not imply that the individual utilities held by the holding company are less risky.

IV. CONCLUSION

Q. Does this conclude your Rejoinder Testimony?

A. Yes.

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[33] Eastman Surrebuttal Testimony, at 8.
[34] D'Ascendis Direct Testimony, at 41-42.

CUPA W&WW STATEMENT NO. 7-RJ

COMMUNITY UTILITIES OF PENNSYLVANIA, INC.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKET NO. R-2021-3025206 & R-2021-3025207

REJOINDER TESTIMONY

OF

EMILY LONG

WATER & WASTEWATER DIVISION

COMMUNITY UTILITIES OF PENNSYLVANIA, INC

Rebuttal Testimony of Emily Long (Water and Wastewater)

INTRODUCTION AND QUALIFICATIONS

Q: **PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A: My name is Emily Long. I am the State Operations Manager at Community Utilities of Pennsylvania Inc. ("CUPA" or "Company"). My business address is 570 Hallet Road, East Stroudsburg, PA 18301.

Q: **ARE YOU THE SAME EMILY LONG WHO PROVIDED THE REBUTTAL STATEMENT CUPA STATEMENT 7-R?**

A: Yes.

Q: **PLEASE SUMMARIZE THE PURPOSE OF YOUR REJOINDER TESTIMONY.**

A: The purpose of my rejoinder testimony is to respond to the outstanding recommendations of OCA's Terry Fought presented in OCA Statement 4SR. Mr. Fought Makes seven recommendations at the conclusion of his testimony beginning at page 14, and I will address his second through seventh recommendation below as within my job responsibilities.

Q: **PLEASE ADDRESS MR. FOUGHT'S SECOND RECOMMENDATION REGARDING ISOLATION VALVE RECORDS.**

A: In Mr. Fought's second recommendation, he suggests CUPA implement recordkeeping steps and repair schedules for isolation valves. Regarding isolation valves in the Tamiment system, CUPA located valves during 2021 and has scheduled a Tamiment valve exercise plan to occur in 2022 at which time data will be collected and inoperable

valves will be evaluated for repair or replacement. For Penn Estates and Westgate, CUPA has located and exercised all valves in 2020 as I previously testified with a 50% rotating exercise schedule for all years going forward. CUPA is willing to report the requested data during its next rate case. However, CUPA is not agreeable to provide a forward-looking schedule of upcoming repairs and replacements with its next rate case as the historic reports will show CUPA's replacement progress and creating such a comprehensive schedule would require CUPA to enlist various engineering services which would significantly increase costs with no benefit on the service or replacement program. Moreover, Mr. Fought has neither identified how much what he has in mind will cost and he has not proposed, nor has any other OCA witness, additional funds to cover those expenses or costs.

Q: **PLEASE ADDRESS MR. FOUGHT'S THIRD RECOMMENDATION REGARDING 6-MONTH REPORTING REQUIREMENTS FOR BWAS AND DO NOT CONSUME ADVISORIES UNTIL CUPA'S NEXT RATE CASE.**

A: As part of CUPA's rate case filings, the information is already reported and was supplied to the parties in the instant proceeding. CUPA does not believe it is a prudent use of resources to require a 6-month filing requirement as this information is already provided to parties during the rate case, and all drinking water non-compliance matters are communicated in CUPA's annual DEP reporting requirements. The DEP Consumer Confidence Reports ("CCRs") are public documents and readily found on CUPA's website accessible to the OCA on an annual basis.

Q: **PLEASE ADDRESS MR. FOUGHT'S FOURTH RECOMMENDATION REGARDING SUPPLEMENTAL TESTING AT TWO WELLS WITHIN THE TAMIMENT SYSTEM FOR TDS, SULFATES, AND HARDNESS.**

A: As I testified in my rebuttal testimony, the OCA's request that CUPA undertake testing and analysis of secondary standards including TDS, sulfates, and hardness encompass testing not required by the PADEP for safe drinking water. CUPA is currently assessing the costs of testing for these parameters at the OCA's referenced locations and if CUPA does proceed with testing for these parameters, CUPA is willing to supply the lab results and findings during its next rate case filing. Additionally, as I stated in rebuttal, Mr. Fought and the OCA have not proposed any adjustments that I have been made aware of as part of their adjustments to CUPA's request to date to cover the expense of the supplemental testing.

Q: **PLEASE ADDRESS MR. FOUGHT'S FIFTH RECOMMENDATION REGARDING THE PENN ESTATES WATER SYSTEM AND ENGINEERING REPORTS AND IMPLEMENTATION TO ADDRESS ADEQUATE SUPPLY.**

A: As part of my rebuttal and subsequently shared to the OCA through discovery, CUPA's engineer GHD has already completed the engineering analysis for the Penn Estates system in February 2021 which addressed each of Mr. Fought's requests. CUPA is willing to submit a schedule during its next rate case to show the implementation status and projections to address Mr. Fought's points 2-6 of his recommendation.

Q: **PLEASE ADDRESS MR. FOUGHT'S SIXTH RECOMMENDATION REGARDING THE PROVISION OF GRINDER PUMP INFORMATION TO CUSTOMERS.**

A: CUPA accepts Mr. Fought's recommendation. As I previously testified, CUPA is already relaying much of this information to affected customers through prior community meetings. CUPA will provide every new customer that has a grinder pump with information on the customer required operation and maintenance to ensure continued operation.

Q: **PLEASE ADDRESS MR. FOUGHT'S SEVENTH RECOMMENDATION REGARDING THE DEP CO&A FOR THE PENN ESTATES WASTEWATER SYSTEM.**

A: CUPA is willing to submit progress reports at the time it files its next rate case. As the PA DEP CO&A falls under the jurisdiction of the PA DEP, it would not be efficient for CUPA to submit ongoing progress reports to the parties, and the outcome of the CO&A and status can be provided during CUPA's next rate case.

Q: **DOES THIS CONCLUDE YOUR PREPARED REJOINDER TESTIMONY?**

A: Yes.