COMMONWEALTH OF PENNSYLVANIA

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December 21, 2021

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission
v.
Aqua Pennsylvania, Inc. and
Aqua Pennsylvania Wastewater, Inc.
Docket Nos. R-2021-3027385 (Water)
C-2021-3028466 (Water)
R-2021-3027386 (Wastewater)
C-2021-3028467 (Wastewater)

Dear Secretary Chiavetta:

Consistent with 52 Pa. Code Section 5.412a of the Commission's regulations, which requires the electronic submission of pre-served testimony, enclosed for electronic filing please find the following Pre-Served Testimony and Exhibits on behalf of the Office of Consumer Advocate (OCA) in the above-referenced proceedings. Please note that the documents listed below were admitted into the record at the evidentiary hearing conducted on December 20, 2021.

Office of Consumer Advocate's Direct Testimony

OCA Statement 1 -- Direct Testimony of Ralph C. Smith – Attachment RCS-1, Exhibits LA-1 through LA-3 and Exhibit LA-4 (HIGHLY CONFIDENTIAL)
OCA Statement 2 -- Direct Testimony of Morgan N. DeAngelo – Appendix A
OCA Statement 3 -- Direct Testimony of David J. Garrett – Appendix A, Appendix B, and Exhibits DJG-1 through DJG-17
OCA Statement 4 -- Direct Testimony of Glenn A. Watkins – Schedules GAW-1 through GAW-8 and Schedule GAW-9 (HIGHLY CONFIDENTIAL)
OCA Statement 5 – Direct Testimony of Roger D. Colton – Schedule RDC-1 through Schedule RDC-2 and Appendix
OCA Statement 6 – Direct Testimony of Barbara R. Alexander – Exhibits BA-1 through BA-7
OCA Statement 7 – Direct Testimony of Terry L. Fought – Exhibits TLF-1W through TLF-9W, Exhibit TLF-1WW, Exhibit TLF-2WW and Appendix A

[1]The OCA is filing a Public and Highly Confidential version of its testimony with the Secretary's Office. The Public version will not include the confidential information contained in the three exhibits marked Highly Confidential.

Office of Consumer Advocate's Supplemental Direct Testimony

OCA Statement 4 Supp. – Supplemental Direct Testimony of Glenn A. Watkins

OCA Statement 7 Supp. – Supplemental Direct Testimony of Terry L. Fought

Office of Consumer Advocate's Rebuttal Testimony

OCA Statement 4R – Rebuttal Testimony of Glenn A. Watkins

Office of Consumer Advocate's Surrebuttal Testimony

OCA Statement 1SR - Surrebuttal Testimony of Ralph C. Smith – Exhibits LA-5 through Exhibits LA-8
OCA Statement 2SR - Surrebuttal Testimony of Morgan N. DeAngelo
OCA Statement 3SR - Surrebuttal Testimony of David J. Garrett
OCA Statement 4SR - Surrebuttal Testimony of Glenn A. Watkins – Schedule GAW-1SR and Schedule GAW-2SR (HIGHLY CONFIDENTIAL)
OCA Statement 5SR – Surrebuttal Testimony of Roger D. Colton
OCA Statement 6SR – Surrebuttal Testimony of Barbara R. Alexander – Exhibit BA-8
OCA Statement 7SR – Surrebuttal Testimony of Terry L. Fought

OCA Hearing Exhibits

OCA Hearing Exhibit 1 – List of the Evidence Offered by the Office of Consumer Advocate
OCA Hearing Exhibit 2 – Aqua Responses to OCA Interrogatories, served 12/17/21

All testimony is accompanied by a witness verification. The OCA's submission also addresses the requirements of the Commission's January 10, 2013 Implementation Order at Docket M-2012-2331973, which requires electronic access to pre-served testimony.

All parties and the presiding officer have been served previously with the testimony and exhibits. This letter has been served per the attached Certificate of Service.

Respectfully submitted,

/s/ Erin L. Gannon
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Enclosures:
cc: The Honorable Mary D. Long **(email only)**
Certificate of Service
*321349

CERTIFICATE OF SERVICE

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

I hereby certify that I have this day served a true copy of the following document, Letter Re: Electronic Filing of the Office of Consumer Advocate's Pre-Served Testimony and Exhibits, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 21st day of December 2021.

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Dated: December 21, 2021
*321350

OCA Statement 1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket Nos. R-2021-3027385
	:	R-2021-3027386
Aqua Pennsylvania, Inc.	:	
Aqua Pennsylvania Wastewater, Inc.	:	

Direct Testimony of
Ralph C. Smith

on Behalf of the
Pennsylvania Office of Consumer Advocate

November 11, 2021

DIRECT TESTIMONY OF RALPH C. SMITH
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ATTACHMENTS:

RCS-1, Background and Qualifications

EXHIBITS:

LA-1, Summary Schedules showing Revenue Requirement, Rate Base, Net Operating Income and Adjustments for the Water and Wastewater utility operations

LA-2, Adjustment Schedules showing Rate Base and Net Operating Income Adjustments for the Water and Wastewater utility operations

LA-3, Selected Non-Confidential Documents Referenced in the Testimony and Exhibits LA-1 and LA-2

LA-4, Selected Highly Confidential Documents Referenced in the Testimony and Exhibits LA-1 and LA-2

I. INTRODUCTION

Q. Please state your name, position and business address.

A. Ralph C. Smith. I am a Senior Regulatory Consultant at Larkin & Associates, PLLC, 15728 Farmington Road, Livonia, Michigan 48154.

Q. Please describe Larkin & Associates.

A. Larkin & Associates is a Certified Public Accounting and Regulatory Consulting firm. The firm performs independent regulatory consulting primarily for public service/utility commission staffs and consumer interest groups (public counsels, public advocates, consumer counsels, attorneys general, etc.). Larkin & Associates has extensive experience in the utility regulatory field as expert witnesses in over 400 regulatory proceedings including numerous telephone, water and sewer, gas, and electric matters.

Q. Please summarize your educational background.

A. I received a Bachelor of Science degree in Business Administration (Accounting Major) with distinction from the University of Michigan - Dearborn, in April 1979. I passed all parts of the C.P.A. examination in my first sitting in 1979, received my CPA license in 1981, and received a certified financial planning certificate in 1983. I also have a Master of Science in Taxation from Walsh College, 1981, and a law degree (J.D.) cum laude from Wayne State University, 1986. In addition, I have attended a variety of continuing education courses in conjunction with maintaining my accountancy license. I am a licensed Certified Public Accountant and attorney in the State of Michigan. I am also a Certified Financial Planner™ professional and a

Certified Rate of Return Analyst ("CRRA"). Since 1981, I have been a member of the Michigan Association of Certified Public Accountants. I am also a member of the Michigan Bar Association and the Society of Utility and Regulatory Financial Analysts ("SURFA"). I have also been a member of the American Bar Association ("ABA"), and the ABA sections on Public Utility Law and Taxation.

Q. Please summarize your professional experience.

A. Subsequent to graduation from the University of Michigan, and after a short period of installing a computerized accounting system for a Southfield, Michigan realty management firm, I accepted a position as an auditor with the predecessor CPA firm to Larkin & Associates in July 1979. Before becoming involved in utility regulation, where the majority of my time for the past 42 years has been spent, I performed audit, accounting, and tax work for a wide variety of businesses that were clients of the firm.

During my service in the regulatory section of our firm, I have been involved in rate cases and other regulatory matters concerning numerous electric, gas, telephone, water, and sewer utility companies. My present work consists primarily of analyzing rate case and regulatory filings of public utility companies before various regulatory commissions and where appropriate, preparing testimony and schedules relating to the issues for presentation before these regulatory agencies.

I have performed work in the field of utility regulation on behalf of industry, state attorneys general, consumer groups, municipalities, and public service commission staffs concerning regulatory matters before regulatory agencies in

Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, Nevada, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Washington D.C., West Virginia, and Canada as well as the Federal Energy Regulatory Commission and various state and federal courts of law. My prior testimonies have included evaluations of numerous utility rate case filings and revenue requirement determinations.

Q. Have you prepared an attachment summarizing your educational background and regulatory experience?

A. Yes. Attachment RCS-1 provides details concerning my experience and qualifications.

Q. On whose behalf are you appearing?

A. Larkin & Associates, PLLC, was retained by the Pennsylvania Office of Consumer Advocate ("OCA") to review the rate request of Aqua Pennsylvania, Inc. ("Aqua", "AP", or "Company"). Accordingly, I am appearing on behalf of the OCA.

Q. Have you previously testified before the Pennsylvania Public Utility Commission?

A. Yes. I have testified before the Pennsylvania Public Utility Commission ("PA PUC" or "Commission") previously on a number of occasions.

Q. Who are the OCA's other expert witnesses?

A. In OCA Statement 2, Morgan DeAngelo addresses COVID-19 pandemic issues, Aqua's proposed positive acquisition adjustment related to the Company's purchase of water system assets from the Borough of Phoenixville, and the proposed Federal Tax Adjustment Clause Rider.

David Garrett provides the OCA's recommended cost of capital and related analyses in OCA Statement 3.

In OCA Statement 4, Glenn Watkins provides an analysis of the class cost of service studies, rate design, Aqua's proposed water subsidy of wastewater, rate design recommendations, and Aqua's proposed purchased water and purchased power surcharges.

In OCA Statement 5, Roger Colton recommends changes in Aqua's proposed bill discount programs, arrearage forgiveness and outreach to low-income customers.

OCA Statement 6 contains the analyses and recommendations of Barbara Alexander concerning customer-service issues.

Finally, a water and wastewater engineer, Terry Fought, makes several recommendations about technical aspects of the Authority's water delivery and wastewater collection systems. His testimony is marked as OCA Statement 7.

Q. How will your testimony be organized?

A. I will present an Overall Financial Summary that addresses the revenue increases requested by Aqua for its water utility, and for its wastewater utility. I then address each of the utilities that are the subject of the Company's revenue requirement filings in this proceeding. I present an explanation of the organization and content of my summary schedule and adjustment exhibits, which are attached to my testimony, in Exhibits LA-1 and LA-2, respectively. That discussion is then followed by sections on Rate Base and Net Operating Income adjustments, where I explain each adjustment to FPFTY results that is being recommended for Aqua's water and wastewater utilities.

Q. What base rate revenue increases has Aqua requested in the current case?

A. Aqua has presented seven revenue requirement calculations where the Company applies a rate of return to rate base and compares the required operating income with its adjusted operating income and uses the difference to derive a revenue deficiency or sufficiency. The Company is proposing to increase its base rate revenues by $97.685 million on a total Company basis, or approximately 17.86%. Specifically, Aqua is requesting a base rate revenue increase of approximately $86.119 million for its Water Operations; and a base rate revenue increase of approximately $11.566 million for its Wastewater Operations. As shown in the table below, Aqua is requesting that approximately $20.839 million of the wastewater operations combined revenue requirement be allocated to its Water Operations:

Aqua Pennsylvania, Inc. Revenue Requirement Summary

	Total Company	Water Operations	Wastewater Base Operations	Wastewater Limerick	Wastewater East Bradford	Wastewater Cheltenham	Wastewater East Norriton	Wastewater New Garden
Present Rate Revenue	$ 546,806,058	$ 509,746,949	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,871,698
Additional Revenue Requirement	97,684,828	65,279,187	16,926,261	5,947,094	816,876	3,057,334	2,907,169	2,750,907
Act 11 Allocation	-	20,839,425	(13,451,997)	(2,977,700)	(457,861)	(515,804)	(1,749,281)	(1,686,782)
Proposed Revenues	$ 644,490,885	$ 595,865,561	$ 22,486,025	$ 6,947,967	$ 1,373,584	$ 9,800,270	$ 4,081,655	$ 3,935,824
Rate Increase/(Decrease) - $	$ 97,684,828	$ 86,118,612	$ 3,474,263	$ 2,969,394	$ 359,015	$ 2,541,530	$ 1,157,888	$ 1,064,126
Rate Increase/(Decrease) - %	17.86%	16.89%	18.27%	74.63%	35.39%	35.01%	39.60%	37.06%

Notes and Source:
Exhibits 1-A and 1-B, Schedule Act 11, page 1 from Aqua's filing

Q. What is the Company's basis for allocating approximately $20.839 million of the wastewater combined revenue requirement to Water Operations?

A. Pursuant to Act 11, the Company is proposing to determine its revenue requirement on a combined water and wastewater basis and to allocate the $20.839 million of its wastewater cost of service to water operations as authorized by Section 1311(c) of the Public Utility Code. As stated on page 10 of her Direct Testimony, Ms. Heppenstall states that the amount of Act 11 recovery was determined by subtracting the proposed level of wastewater revenue after various increases from the pro forma cost of wastewater service for the twelve months ended March 31, 2023.

Q. What does Subsection (c) of Section 1311 of the Public Utility Code state?

A. Subsection (c) of Section 1311 of the Public Utility Code states as follows:

> Segregation of Property - When any public utility furnishes more than one of the different types of utility service, the Commission shall segregate the property used and useful in furnishing each type of such service, and shall not consider the property of such public utility as a unit in determining the value of the rate base of such public utility for the purpose of fixing base rates. A utility that provides water and wastewater service shall be exempt from this subsection upon petition of a utility to combine water and wastewater revenue

requirements. The Commission, when setting base rates, after notice and an opportunity to be heard, may allocate a portion of the wastewater revenue requirement to the combined water and wastewater customer base if in the public interest.

Q. Which OCA witness is addressing the amount from Aqua's wastewater operations to be allocated to its Water Operations?

A. OCA witness Glenn Watkins addresses that allocation.

Q. Have you incorporated an allocation of revenue requirement from Aqua's wastewater operations to its Water Operations in your calculation of Aqua's revenue requirement on Exhibit LA-1, Schedule A, page 2?

A. No. The calculations of Aqua's revenue requirement presented on my Exhibit LA-1, Schedule A, page 1, reproduce the revenue deficiency (or sufficiency) for Aqua's water and wastewater utilities that has been requested by Aqua. Aqua's proposed Act 11 reallocation of wastewater revenue deficiency amounts onto Aqua's water utility ratepayers is reproduced on line 12 of my Exhibit LA-1, Schedule A, page 1.

The adjusted revenue deficiency and excess amounts shown on Exhibit LA-1, Schedule A, page 2, do not incorporate an allocation of revenue requirement from Aqua's wastewater operations to its Water utility operations. Please see the Direct Testimony of OCA witness Glenn Watkins for OCA's proposed allocation of revenue requirement amounts from Aqua's wastewater to its water operations.

Q. For which Aqua utilities are you addressing Aqua's revenue requirements?

A. I am addressing the revenue requirements requested by Aqua for its Pennsylvania water and wastewater operations.

Q. What is shown in Exhibit LA-1?

A. Exhibit LA-1 shows the OCA's accounting and revenue requirement summary schedules for Aqua's water and wastewater utility operations.

Q. What is shown in Exhibit LA-2?

A. Exhibit LA-2 shows the accounting and revenue requirement adjustment schedules for Aqua's water and wastewater utility operations. Exhibit LA-2 contains rate base and operating income adjustment schedules which present details for each adjustment that is recommended by me or other OCA witnesses.

Q. What is shown in Exhibit LA-3?

A. Exhibit LA-3 presents selected non-confidential documents referenced in my testimony and/or in Exhibits LA-1 and LA-2.

Q. What is shown in Exhibit LA-4?

A. Exhibit LA-4 presents selected documents that have been identified by Aqua as being "highly confidential" that are referenced in my testimony and/or Exhibits LA-1 and LA-2.

II. OVERALL FINANCIAL SUMMARY

Summary Schedules (Exhibit LA-1)

Q. What does Schedule A in Exhibit LA-1 show?

A. Exhibit LA-1 shows the development of the adjusted revenue requirement for Aqua's water and wastewater utility operations.

Q. What is shown on Exhibit LA-1, Schedule A, page 1?

A. Schedule A, page 1, reproduces in summary form the revenue increase amounts that Aqua is requesting in total (column A), for its water utility (column B), and for its wastewater utilities (columns C through H). As shown on Schedule A, page 1, column A, line 7, Aqua is requesting total base rate revenue increases of approximately $97.685 million based on a fully projected future test year ("FPFTY") ending March 31, 2023.

Schedule A, page 1, line 1, shows Aqua's proposed rate base in total (column A) and for each Aqua utility operation (columns B through H).

Line 2 shows the 7.64% rate of return that Aqua is requesting.

Line 3 shows the required net operating income amounts for each utility that Aqua is requesting.

Line 4 shows the achieved net operating income for the FPFTY that Aqua has proposed.

Line 5 shows the operating income deficiency for the FPFTY for each utility that Aqua has proposed.

Line 6 shows the gross revenue conversion factors for each utility that Aqua has proposed.

Line 7 shows the gross revenue deficiency amounts for each utility that Aqua has requested.

Q. What is shown on Exhibit LA-1, Schedule A, page 1, lines 8 and 9?

A. Exhibit LA-1, Schedule A, page 1, line 8, shows the amount of operating revenue at current rates in total (column A) and for each Aqua utility (columns B through H). Line 9 shows the percentage increase in base rate revenue that Aqua is requesting in total (column A) and for each Aqua utility (columns B through H).

Q. What is shown on Exhibit LA-1, Schedule A, page 1, lines 10 through 16?

A. Exhibit LA-1, Schedule A, page 1, line 10 shows the amount of operating revenue at current rates in total (column A) and for each Aqua utility (columns B through H).

Line 11 shows the amount of base rate revenue increase that Aqua is requesting in total (column A) and for each Aqua utility (columns B through H).

Line 12 shows Aqua's proposed shift of wastewater utility revenue requirements onto water utility ratepayers, pursuant to Act 11.

Line 13 shows Aqua's proposed base rate revenue increase after the Company's proposed Act 11 revenue requirement shift.

Line 14 shows Aqua's proposed revenue requirement for each utility after the Act 11 revenue requirement shift, and line 15 shows the percentage increase in revenue proposed by Aqua for each utility after the Act 11 revenue requirement shift. Line 16 shows, in percentage terms, how much of each of the wastewater utility revenue requirement amounts calculated by Aqua is being shifted away from

wastewater utility ratepayers and would be placed on Aqua's water utility ratepayers, if Aqua's requests were to be granted in full.

Q. What is show on Exhibit LA-1, Schedule A, page 2?

A. Schedule A, page 2, shows the calculations of the revenue increase or decrease amounts that reflect the recommendations of OCA witnesses. The total revenue excess (combined water and wastewater utility results) is shown on Schedule A, page 2, line 7, in column A. The Aqua water utility revenue excess is shown on Schedule A, page 2, line 7, in column B. The revenue deficiencies for Aqua's wastewater utilities are shown in columns C through H, on Schedule A, page 2, line 7.

As shown on Exhibit LA-1, Schedule A, page 2, column A, line 7, my recommendations and the recommendations of other OCA witnesses produce an overall net revenue excess of approximately $13.458 million based on a fully projected future test year ("FPFTY") ending March 31, 2023.

Q. What revenue deficiency or excess do you recommend for Aqua's water utility?

A. As shown on Exhibit LA-1, Schedule A, page 2, column B, line 7, the adjusted results for Aqua's water utility result in a revenue excess of approximately $36.353 million.

Q. What revenue deficiency or excess do you recommend for Aqua's wastewater utilities?

A. The adjusted revenue deficiency results for Aqua's wastewater utilities are shown on Exhibit LA-1, Schedule A, page 2, in columns C through H, on line 7, and are summarized below:

- Wastewater Base (column C): $11.486 million revenue deficiency
- Limerick Wastewater (column D): $4.528 million revenue deficiency
- East Bradford Wastewater (column E): $0.680 million revenue deficiency
- Cheltenham Wastewater (column F): $1.907 million revenue deficiency
- East Norriton Wastewater (column G): $2.287 million revenue deficiency
- New Garden Wastewater (column H): $2.007 million revenue deficiency.

Q. What is shown on Exhibit LA-1, Schedule A, page 3?

A. Schedule A, page 3, summarizes the differences between Aqua's request (as summarized on Schedule A, page 1) and OCA's adjusted results (as summarized on Schedule A, page 2). Schedule A, page 3, line 1, shows the differences in rate base between Aqua's request and OCA's adjusted results. Line 3 shows differences in required net operating income. Line 4 shows differences in adjusted net operating income. Line 5 shows differences in the amount of net operating income excess or deficiency. Line 7 shows differences in the revenue requirement excess or deficiency.

As shown on Schedule A, page 3, column A, line 7, the results of my recommendations and the recommendations of other OCA witnesses, reflect revenue requirement impacts that are approximately $111.1 million lower than Aqua has requested. In other words, the results of the adjustments recommended by me and other OCA witnesses produce base rate revenues for Aqua that are $111.1 million lower than the revenue increases proposed by Aqua.

Q. Have you presented a reconciliation of Aqua's proposed revenue increase with OCA's adjusted revenue excess or deficiency for each of Aqua's water and wastewater utility operations?

A. Yes. Schedule A, pages 4 through 10, present a reconciliation of the revenue requirement for Aqua's water utility (page 4), and for each of Aqua's wastewater utilities (pages 5 through 10), reflecting the approximate revenue requirement impact of the recommendations of OCA witnesses. The approximate revenue requirement impact of each adjustment is shown in column C of Schedule A, pages 4 through 10, for each utility.

Q. What is shown on Schedule A-1 of Exhibit LA-1?

A. Schedule A-1 presents the derivation of my recommended Gross Revenue Conversion Factor ("GRCF") for the Aqua water and wastewater utilities. The GRCF is used to derive the amount of revenue increase (decrease) that is needed based upon a deficiency (excess) in the utility's ongoing level net operating income. Any increase or decrease in net income granted in this proceeding will cause Aqua to

incur additional taxes and uncollectible expenses. The GRCF "grosses up" the net operating income deficiency (sufficiency) for these items in order to derive a revenue requirement impact.

Q. Did Aqua calculate a GRCF for its water system in this proceeding?

A. Yes. In Exhibit 1-A, Aqua provided its recommended GRCF of 1.422652 for Water Operations and related calculations. Aqua's calculation of its GRCF is shown on Exhibit LA-1, Schedule A-1, page 1, in columns A and C.

Q. What GRCF do you recommend for Aqua's water utility?

A. Using the same data shown on Aqua Exhibit 1-A, Schedule A-1, page 1, I calculated my recommended GRCF, which is shown in Exhibit LA-1, Schedule A-1, page 1, Column D. I also recommend a GRCF of 1.422652 for Aqua's water utility. This GRCF incorporates the corporate federal income tax rate of 21 percent, which has applied for periods from January 1, 2018 forward.

Q. Did Aqua calculate a GRCF for its Wastewater Operations in this proceeding?

A. Yes. In Exhibit 1-B, Schedule A-3, Aqua provided its recommended GRCF of 1.43253 for Wastewater Operations and its related calculation. Aqua's calculation of its GRCF is shown on Exhibit LA-1, Schedule A-1, Columns A and C. In its filing, Aqua also shows the amount of revenue increase it is requesting and the components of that increase on Aqua Exhibit 1-B, Schedule A-1, page 1, in the "Adjustment"

column that appears between the "Present Rates 3/31/23 Amount" and the "Proposed Rates Amount" columns.

Q. What GRCF did you recommend for Aqua's wastewater utilities?

A. Using the same data shown on Aqua Exhibit 1-B, Schedule A-1, page 1, I calculated my recommended GRCF for each Aqua wastewater utility operation, as shown in Exhibit LA-1, Schedule A-1, pages 2 through 7, in column D on each page. I recommend a GRCF of 1.43253 for Aqua's wastewater utility operations. This wastewater utility GRCF incorporates the current corporate federal income tax rate of 21 percent, which has applied for periods from January 1, 2018 forward.

Q. Why are the GRCFs different for Aqua's water and wastewater utilities?

A. The reason for the different GRCFs for Aqua's water and wastewater utilities is the uncollectibles factor, which is 0.512 percent for water (as shown on Exhibit LA-1, Schedule A-1, page 1 of 7, line 2) and which is 1.194 percent for the Aqua wastewater utilities (as shown on Exhibit LA-1, Schedule A-1, on line 2, of pages 2 through 7). The other factors which go into the development of the GRCF, i.e., the PUC assessment, the state income tax rate and the federal income tax rate, are the same for Aqua's water and wastewater utilities, as shown on Exhibit LA-1, Schedule A-1, pages 1 through 7.

Q. What is shown on Schedule B of Exhibit LA-1?

A. Exhibit LA-1, Schedule B shows my recommended adjusted rate base for each Aqua utility. Page 1 shows the adjusted rate base for Aqua's water utility. Pages 2 through 7 show the adjusted rate base for each Aqua wastewater utility.

Q. What is shown on Schedule B.1 of Exhibit LA-1?

A. Exhibit LA-1, Schedule B.1, page 1, summarizes my recommended rate base adjustments for the water utility. Pages 2 through 7 of Schedule B.1 summarize my recommended rate base adjustments for each Aqua wastewater utility. Schedules B-1 through B-3[1] which are contained in Exhibit LA-2, present the supporting calculations for each of my recommended adjustments to rate base.

Q. What is shown on Schedule C of Exhibit LA-1?

A. Schedule C presents my recommended adjusted net operating income. Page 1 summarizes my recommended net operating income for the water utility. Pages 2 through 7 summarize my recommended adjusted net operating income for each Aqua wastewater utility.

Q. What is shown on Schedule C.1 of Exhibit LA-1?

A. Schedule C.1 summarizes my recommended net operating income adjustments for each Aqua utility. Page 1 summarizes my recommended net operating income adjustments for the water utility. Pages 2 through 7 summarize my recommended net operating income adjustments for each Aqua wastewater utility. Schedule C.1 also

[1] The contents page of Exhibit LA-2 indicates whether each adjustment pertains to Aqua's water utility, its wastewater utilities, or both.

presents the impact on income tax expense resulting from my recommended adjustments. Schedules C-1 through C-18[2], which are contained in Exhibit LA-2, present supporting calculations for the OCA's adjustments to net operating income that are addressed in my testimony.

Q. What is shown on Exhibit LA-1, Schedule D?

A. Schedule D presents OCA's recommended capital structure and overall rate of return based on the recommendations of OCA witness David Garrett.

<u>Adjustment Schedules (Exhibit LA-2)</u>

Q. What does Exhibit LA-2 show?

A. Exhibit LA-2 shows the adjustments to rate base and net operating income that I am recommending. The contents page of Exhibit LA-2 indicates whether each rate base and net operating income adjustment pertains to Aqua's water utility, wastewater utility operations, or both.

Q. What is shown on Exhibit LA-2 in Schedules B-1 through B-3?

A. Exhibit LA-2, Schedule B-1 through B-3[3] present the supporting calculations for each of the OCA adjustments to rate base.

Q. What is shown on Exhibit LA-2, Schedules C-1 through C-18?

[2] The contents page of Exhibit LA-2 indicates whether each adjustment pertains to Aqua's water utility, its wastewater utilities, or both.
[3] There are gaps between these schedules as certain adjustments pertained only to water operations.

A. Exhibit LA-2, Schedules C-1 through C-18[4] present supporting calculations for each of the OCA adjustments to net operating income.

III. FULLY PROJECTED FUTURE TEST YEAR

Q. What time period has Aqua used as the basis for determining its revenue requirements in this proceeding?

A. Aqua used the 12 months ending March 31, 2023, as the test period for determining its revenue requirements in this proceeding. This is referred to as the fully projected future test year ("FPFTY" or "rate year") approach. The use of a fully projected future test year is permitted pursuant to Act 11 of 2012 ("Act 11"). The March 31, 2023 period used as the FPFTY thus approximately corresponds with the rate effective year for the new utility rates that are being established in this Aqua rate case.

Q. How did Aqua apply Act 11 in its current rate case?

A. Aqua witness William Packer (AP Statement No. 1) states at page 12 of his Direct Testimony that:

> Exhibits 1-A and 1-B through 1-G are being submitted in support of Aqua PA's proposed rate increase for water and wastewater operations, respectively. They present the Company's pro forma revenue, expense and rate base data based on HTY (year ended March 31, 2021), FTY (year ending March 31, 2022), and FPFTY (year ending March 31, 2023). Data for the HTY were obtained from the Company's books and records. For the FTY, revenues are based on the estimated number of customers served as of March 31, 2022. Correspondingly, for the FPFTY, revenues are based on the

[4] There are gaps between these schedules as certain adjustments pertained only to water operations.

estimated number of customers served as of March 31, 2023. Operating expenses have been similarly adjusted to reflect, for the most part, FTY and FPFTY-end conditions. Aqua PA's claimed rate base includes its estimated net Utility Plant in Service at March 31, 2022 and March 31, 2023.

Q. Have you used the same FPFTY?

A. Yes. To compute the revenue requirement for Aqua's water and wastewater utilities I used the same FPFTY ending March 31, 2023.

IV. RATE BASE

Q. Please summarize your adjustments to Aqua's water utility rate base.

A. As shown in Aqua's Exhibit 1-A, Schedule G-1, the Company proposes a FPFTY rate base of approximately $3.818 billion for its water operations. As shown on Exhibit LA-1, Schedule B, page 1, I recommend FPFTY rate base of approximately $3.809 billion for Aqua's water operations, which is about $9.5 million lower than the Company's proposal.

Q. Please summarize your adjustments to Aqua's wastewater base utility rate base.

A. As shown in Aqua's Exhibits 1-B, Schedule G-1, the Company proposes a FPFTY rate base of approximately $198.4 million for its wastewater base utility operations. As shown on Exhibit LA-1, Schedule B, page 2, I recommend a FPFTY rate base of $195.4 million for Aqua's wastewater base operations, which is about $3.0 million lower than the Company's proposal.

Q. Have you also presented calculations of the rate base for each of the other Aqua wastewater utilities that Aqua has included in its requested revenue requirement which were acquired by Aqua pursuant to the provisions of §1329?

A. Yes. On Exhibit LA-1, Schedule B, pages 3 through 7, I present calculations of the adjusted rate base for each of the other wastewater utilities that Aqua has included in its requested revenue requirement which were acquired by Aqua pursuant to the provisions of 66 Pa. C.S. §1329.

Q. Would you please discuss each of your recommended adjustments to rate base?

A. Yes, each of my recommended adjustments to rate base is discussed below.

<u>Schedule B-1, Phoenixville Water Acquisition Adjustment (Water Utility)</u>

Q. Please explain the adjustment to rate base for the Phoenixville Water Acquisition Adjustment.

A. As shown on Exhibit LA-2, Schedule B-1, based on the recommendation of OCA witness Morgan DeAngelo, I have removed from Aqua's proposed rate base the amount of the Phoenixville Water Acquisition Adjustment. This adjustment reduces Aqua's proposed water utility rate base by $2.315 million.

Q. Is there a related adjustment for the amortization expense?

A. Yes. As shown on Exhibit LA-2, Schedule C-1, and discussed in a subsequent section of my direct testimony, the adjustment recommended by OCA witness DeAngelo to remove the amortization expense associated with the Phoenixville

Water Acquisition Adjustment reduces Aqua's water utility amortization expense by $121,865.

<u>Schedule B-2, CIAC and Customer Advances – Actual Amounts as of 3/31/2021 (Water and Wastewater Utilities)</u>

Q. What amount of rate base offset for CIAC and Customer Advances did Aqua reflect as of 3/31/2021 for its water utility operations?

A. As shown on Aqua's Schedule G-6 from the Company's Exhibit 1-A, Aqua reflected on line 1 of that schedule an amount for Contributions in Aid to Construction ("CIAC") and Customer Advances of $184,419,150 for its water utility operations. Aqua then used that 3/31/2021 amount of CIAC and Customer Advances as the starting point for its projections of changes in the CIAC and Customer Advances balances for 3/31/2022 and 3/31/2023.

Q. Did Aqua provide its actual amounts of CIAC and Customer Advances as of 3/31/2021 for its water utility operations?

A. Yes. In its response to OCA-VII-11, Aqua provided its actual 3/31/2021 balance of CIAC of $135,594,031. In its response to OCA-VII-12, Aqua provided its actual 3/31/2021 balance of Customer Advances of $55,266,575.

Q. How does the sum of those actual amounts of CIAC and Customer Advances as of 3/31/2021 for its water utility operations compare with the amount that Aqua used on its Exhibit 1-A, Schedule G-6 for the 3/31/2021 balance?

A. The actual 3/31/2021 amounts of CIAC of $135,594,031 and Customer Advances of $55,266,575 from Aqua's responses to OCA-VII-11 and OCA-VII-12 sum to

$190,850,606. The $190,850,606 actual 3/31/2021 amount is $6,431,456 larger than the $184,419,150 that Aqua reflected on Exhibit 1-A, Schedule G-6 for the 3/31/2021 balance.

Q. Has Aqua explained how it forecasted plant and CIAC and Customer Advances changes for 3/31/2022 and 3/31/2023?

A. Yes. Aqua's response to OCA-VII-14(a) indicates that:

> As noted in the Company's response to the filing requirement E. Rate Base – RB16, the Company's claim does not include any projects to be funded by customer advances for construction. Any increase in CAC would trigger a corresponding and offsetting adjustment to plant in service, hence the effect on the Company's rate base is zero. Please refer to Schedules G-1 and G-6 of Exhibit 1-A for water and Schedule G-1 and G-6 of Exhibit 1-B for wastewater.

Thus, Aqua's projections of impacts from changes to the CIAC and Customer Advances balances out to 3/31/2022 and 3/31/2023 appear to include equal and offsetting changes to Plant and to the combined balances of CIAC and Customer advances to reflect plant additions beyond the end of the HTY, i.e., beyond 3/31/2021, that have been projected by the Company to be funded with such advances.

Q. Are you recommending an adjustment to rate base for CIAC and Customer Advances?

A. Yes. As noted above, the Company's starting rate base amount, as of 3/31/2021 on Company Exhibit 1-A, Schedule G-6, understates the actual amounts of CIAC and Customer Advances as of that date, as provided in the responses to OCA-VII-11 and

OCA-VII-12. Since the Company used a 3/31/2021 balance of CIAC and Customer Advances as the starting point for projecting the 3/31/2022 and 3/31/2023 rate base, the understatement of that 3/31/2021 balance should be remedied by an adjustment to rate base. As shown on Exhibit LA-2, Schedule B-2, the water rate base is decreased by $6.431 million.

Q. Are you recommending a similar adjustment to wastewater utility rate base for CIAC and Customer Advances to reflect using actual 3/31/2021 balances as the starting point for projections out through 3/31/2023?

A. Yes. As also shown on Exhibit LA-2, Schedule B-2, the wastewater rate base is decreased by $2.994 million to reflect actual CIAC and Customer Advances balances at 3/31/2021, rather than the amounts used by Aqua on its Exhibit 1-B, Schedule G-6 for the wastewater utility operations.

<u>Schedule B-3, Cash Working Capital (Water and Wastewater)</u>

Q. What is Cash Working Capital?

A. Cash working capital ("CWC") is the cash needed by the Company to cover its day-to-day operations. If the Company's cash expenditures, on an aggregate basis, precede the cash recovery of expenses, investors must provide cash working capital. In that situation a net positive cash working capital requirement exists. On the other hand, if revenues are typically received prior to when cash expenditures are made, on average, then ratepayers provide the cash working capital to the utility, and the negative cash working capital allowance is reflected as a reduction to the utility's

rate base. In this case, the cash working capital requirement is a net increase to rate base indicating that investors are supplying these funds.

Q. What has Aqua proposed for cash working capital in the current rate case?

A. The Company's proposed CWC amounts are shown on Schedule G-5 on Aqua's Exhibit 1-A (Water) and Exhibits 1-B through 1-G (Wastewater). In the current rate case, Aqua proposed the following positive HTY cash working capital amounts:[5]

- Water Operations - approximately $5.976 million for Expenses, $4.315 million for taxes and negative $8.715 million for Interest for an overall total cash working capital of $1.576 million, per Schedule G-5 on Aqua's Exhibit 1-A (Water).
- Wastewater Base Operations - approximately $898,000 for Expenses, $68,000 for taxes and negative $412,000 for Interest for an overall total cash working capital of $554,000, per Schedule G-5 on Aqua's Exhibit 1-B (Wastewater base).
- Wastewater Aqua's §1329 acquired utilities – see Schedule G-5 on Aqua's Exhibits 1-C through 1-G (Wastewater, §1329 acquisitions, amounts are shown there for each acquired wastewater utility that Aqua has included in the current rate case).

Q. Have you prepared schedules showing OCA's recommended CWC allowances for each of these Aqua utility operations?

A. Yes. I have recalculated the CWC requirements on Schedule B-3 in Exhibit LA-2. The adjustments to CWC incorporate only reflect the impacts of adjustments to the interest component of CWC at this time.

As shown on Exhibit LA-2, Schedule B-3, page 1, my adjusted CWC requirements are approximately negative $9.433 million for Interest for Water Operations. For Water Operations, Aqua's proposed rate base for CWC is reduced by $0.718 million.

[5] The Company is proposing to use the amounts of HTY cash working capital for the FTY and FPFTY.

As shown on Exhibit LA-2, Schedule B-3, page 2, my adjusted CWC requirements for Aqua's wastewater base utility (not including the §1329 acquisitions) are approximately negative $440,000 for Interest. My adjusted CWC requirement is $28,000 lower than Aqua's proposed CWC allowance for Wastewater base operations (other than §1329 acquisitions).

Q. Have you also computed CWC adjustments for each Aqua wastewater utility that resulted from an acquisition pursuant to §1329?

A. Yes. As shown on Exhibit LA-2, Schedule B-3, pages 3 through 7, I have adjusted Aqua's proposed CWC for each of those wastewater utilities. Due to time constraints only the Interest component of CWC for those utilities has been adjusted at this time. The reductions to rate base for those Aqua wastewater utilities for the CWC Interest component are shown on Schedule B-3, pages 3 through 7.

<u>Schedule B-4, Unamortized Rate Case Expense</u>

Q. Has the Company been deferring and amortizing Rate Case Expense on its books?

A. Yes. As indicated in the Company's response to OCA-VII-18, the Company has been deferring and amortizing rate case expense on its books. The Company has recorded deferred rate case expense in account 186101, Deferred Rate Case Expense. Aqua's response to OCA-VII-18 shows amounts in that account for each month of 2019, 2020 and 2021. Although requested in OCA-VII-18, Aqua did not provide its

balance as of 3/31/2023, but rather referred to the table of Deferred Debits provided with that response and stated that:

> "… amounts related to Deferred Rate Case Expenses … are included as a component of cost of service in the instant proceeding and are not projected on a monthly basis. Please refer to Exhibits 1-A (Rate case …) … [for] projected amounts through March 2023. Both deferred Rate Case Expense and Excess Funding Deficit are amortized over 3 years, consistent with prior regulatory approvals. …"

Q. In the Company's proposed adjustment to operating expenses for Rate Case Expense, is that presented as an amortization or a normalization of operating expense?

A. The Company's proposed adjustment to operating expenses for Rate Case Expense, which is shown on Company Schedule C-4.4, is presented as a normalization of operating expenses, not as an amortization. The Company is requesting $2.2 million in total for Rate Case Expense, and has allocated $2,103,220 or 91.51% of that to the water utility, and is proposing a normalization over 36 months, for an annual allowed amount for the water utility of $671,072.

Q. Was further inquiry made as to the source and treatment of each item that Aqua records in the deferred debit account?

A. Yes. OCA-VII-19 asked Aqua to:

> Please, identify and explain each item of Deferred Debits, when it first arose, when amortization commenced, when amortization will be completed, why the cost was deferred, and Commission authorization for each Deferred Debit item that is being requested for inclusion in rate base.

Aqua's response to OCA-VII-19, however, only stated: "Please see the Company's response to OCA-VII-18." As noted above, Aqua's response to OCA-VII-18 indicates that the Company is recording Deferred Rate Case Expense in account 186101. Account 186, deferred debits, is an asset account that is reported on Aqua's balance sheet.

Q. Has the Company included an amount of unamortized rate case expense in rate base?

A. That is at present unclear from the Company's testimony and responses to discovery requests, such as its responses to OCA-VII-18, OCA-VII-19 and I&E-RE-10. I&E-RE-10(b) had asked about "rate base items" in the current case that relate to amortization or normalization of rate case expense as rate base items. I note that Aqua's response to I&E-RE-10 states that: "There are no amounts included in the current claim that relate to amortization and/or normalization of prior proceeding rate case expense items." Aqua's response to I&E-RE-10 was thus qualified in responding only about "prior proceeding rate case expense items" to which Aqua indicated there were none of those included in rate base.

Q. If the Company did include an amount of unamortized rate case expense in rate base, should that be removed?

A. Yes. In Pennsylvania, utility rate case expense is treated for ratemaking purposes as an operating expense on a normalized basis, not as a deferred expense that is amortized. Consequently, if the Company has included any amount of unamortized

rate case expense in rate base, such as amounts that it recorded in account 186101 (per the response to OCA-VII-18) or would project to record into that account, those amounts should that be removed.

Q. Have you reflected an adjustment to remove unamortized rate case expense from rate base at this time?

A. No, not at this time, because the amount of unamortized rate case expense that Aqua included in rate base, if any, has not yet been identified. If an amount is identified that needs to be removed, I will remove it in a subsequent filing, on Schedule B-4, which would be reserved for that purpose.

V. OPERATING INCOME

Q. What does Aqua show for its water utility operating income?

A. On Aqua's Exhibit 1-A, page 1, line 22, in the Present Rates "3/31/23 Amount" column, the Company shows utility operating income at current rates of $245.8 million for Water Operations. I have summarized Aqua's proposed net operating income for water utility operations on Exhibit LA-1, Schedule C, page 1.

Q. What does Aqua show for its wastewater utility operating income?

A. As I have summarized on Exhibit LA-1, Schedule C, page 2, in column A, Aqua's proposed utility operating income at current rates for the Wastewater Operations is $3.34 million.

Q. Have you also reproduced Aqua's proposed wastewater utility operating income for each of the wastewater utility systems that Aqua acquired pursuant to §1329, and which Aqua has included in the current base rate case?

A. Yes. I have summarized on Exhibit LA-2, Schedule C, page 3 through 7, in column A on each page, Aqua's proposed utility operating income at current rates for each of those acquired wastewater utilities.

Q. Are you recommending any adjustments that impact net operating income for Aqua's water utility?

A. Yes. As shown on Exhibit LA-1, Schedule C, page 1, column B, I am recommending adjustments that increase the Company's net operating income for Water Operations by approximately $8.254 million.

Q. Are you recommending any adjustments that impact net operating income for Aqua's wastewater base utility?

A. Yes. As shown on Exhibit LA-1, Schedule C, page 2, column B, I am recommending adjustments that increase the Company's net operating income for Wastewater Base Operations by approximately $363,000.

Q. Are you recommending any adjustments that impact net operating income for Aqua's acquired wastewater utilities?

A. Yes. Exhibit LA-1, Schedule C, pages 3 through 7, in column B on each page, shows the adjustments I am recommending to the Company's net operating income for each of those wastewater utilities.

Q. On which Schedules in Exhibit LA-2 do you present the recommended adjustments to net operating income?

A. The recommended adjustments to net operating income for the Company's Water and Wastewater Operations are presented below and on Schedules C-1 through C-18 of Exhibit LA-2. Each adjustment to net operating income is also summarized, for each utility, on Exhibit LA-1, Schedule C.1, which has 8 pages, one summary page and one page showing the operating income adjustments for each Aqua utility.

<u>Schedule C-1, Phoenixville Water Acquisition Adjustment (Water Utility)</u>

Q. Please explain the adjustment to amortization expense for the Phoenixville Water Acquisition Adjustment.

A. As shown on Exhibit LA-2, Schedule C-1, based on the recommendation of OCA witness Morgan DeAngelo, I have removed the amount of the Phoenixville Water Acquisition Adjustment amortization from Aqua's proposed amortization expense. The adjustment reduces amortization expense by $121,865.

<u>Schedule C-2, Special Contract Revenue (Water Utility)</u>

Q. Please explain the adjustment to FPFTY Water Utility Special Contract Revenue.

A. As shown on Exhibit LA-2, Schedule C-2, based on the recommendation of OCA witness Glenn Watkins, I have added to Aqua's water utility revenue for the FPFTY an amount of $301,307 for special contract revenue.

<u>Schedule C-3, Income Tax Expense – Repairs Deduction (Water and Wastewater)</u>

Q. How has Aqua treated the income tax impacts from Repairs Deductions?

A. Aqua PA has been applying "flow through" treatment for its tax repairs deductions.[6] This has reduced current income taxes. It also reduces Aqua's effective tax rate by treating tax deductions for repairs as if it were a permanent difference between tax and book amounts, rather than a temporary difference. The Company's current treatment is unusual in the utility industry and can result in large amounts of excess earnings between rate cases. An alternative treatment that is far more common for regulated utilities with cost of service-based rates, is for the temporary book-tax differences related to repairs to be normalized, which involves establishing deferred income tax accounting. If that alternative treatment were to be applied to Aqua PA's repair deductions in the current rate case, deferred income tax expense would be increased, and an amount of ADIT would be established. The ADIT would provide a rate base offset. However, because the amounts of Aqua's repair deductions have been so large, it is not practical in the current Aqua rate case to fully transition to deferred income tax accounting for Aqua's repairs deductions.

Q. Please explain the adjustment to FPFTY Income Tax Expense for Repairs Deductions.

[6] See, e.g., Aqua's response to OCA-IV-21.

A. As shown on Exhibit LA-2, Schedule C-3, for the calculation of FPFTY income tax expense, I recommend using an amount for Repairs Deductions of $167.3 million, per the Company's response to OCA-X-27, which updated the Repairs Deduction amount to $167.3 million from the $163.5 million amount that was identified in Aqua's direct testimony. Aqua witness Saball's direct testimony at page 5, lines 4-6, indicated that the $163.5 million amount is for the 2021 tax year; however, Aqua's response to OCA-X-27 indicated that the amount has been updated to $167.3 million. This is $8.24 million higher than the $159.06 million Repairs Deductions amount that was used by Aqua to compute its proposed income tax expense. This adjustment reduces FPFTY income tax expense by $2.38 million, as shown on Exhibit LA-2, Schedule C-3, line 10.

Q. How did you allocate the $167.3 million repairs deduction between Aqua's water and wastewater utility operations?

A. The allocation of the $167.3 million Repairs Deduction between water and wastewater was reflected on Schedule C-3 proportionately to Aqua's allocation of the Company's proposed $159.06 million deduction.

Q. At page 7, lines 22-23 of her direct testimony, Aqua PA witness Saball refers to a "FIN 48" adjustment, for uncertain tax positions. Do you agree with the Company's offsetting the benefits of its claimed income tax deductions for repairs, to not reflect repairs deductions related to a reserve for uncertain tax positions, pursuant to FIN 48?

A. No. I recommend that the deduction amounts, such as for repairs, reflect the Company's claimed income tax deduction amounts and that those not be reduced by any reserves for uncertain tax positions.

Q. Have you quantified a specific adjustment for impacts on ADIT and income tax expense relating to eliminating the FIN 48 reserves?

A. At this time I have not made a specific adjustment for removing an attempt by Aqua to reduce the repairs deduction for a "FIN 48" reserve. As explained above, on Schedule C-3, I have used a repairs deduction amount of $167.3 million, based on the Company's response to OCA-X-27, which appears to be before Aqua's application of any "FIN 48" reserve for uncertain tax positions. As discussed above, an adjustment has been quantified to reflect a normal recurring level of repairs deductions as shown in Exhibit LA-2, Schedule C-3 for the water utility and wastewater utility.

Data requests OCA-X-26 and OCA-X-27 were asked of Aqua about impacts from its "FIN 48" uncertain tax positions. Aqua's response to OCA-X-27 appears to indicate that out of the $163.5 million amount for the FPFTY that Aqua witness Saball identified in her direct testimony at page 5, lines 5-6, Aqua has identified $4 million as a "FIN 48 removal" amount. Thus, Aqua appears to be attempting to not reflect the income tax impacts of that $4 million uncertain portion of its repairs deductions in its proposed ratemaking income tax calculation in the current case.

To the extent that Aqua has attempted to offset the repairs deduction amount for any "FIN 48 removal" amounts, as appears to be the case from Aqua's response

to OCA-X-27, that Company attempt to reduce the amount of repairs deductions being used for ratemaking income tax calculations should be rejected. The repairs deduction used in the income tax calculation for FPFTY income taxes should reflect the amount expected to be deducted for repairs without any offset for uncertain tax positions.

<u>Schedule C-4, Income Tax Expense - Interest Synchronization (Water and Wastewater)</u>

Q. Please explain your interest synchronization adjustment.

A. The interest synchronization adjustment applies the weighted cost of debt to the adjusted rate base to derive the interest deduction applicable to the calculation of test year income tax expense. After adjustments, my proposed rate base for Aqua's Water Operations and Wastewater differs from that of the Company. This results in an adjustment to the amount of synchronized interest included in the income tax calculation for each operation. The calculations of the interest synchronization adjustment for Aqua's Water Operations and Wastewater Operations are shown on Schedule C-4 of Exhibit LA-2. The interest synchronization adjustment for each Aqua utility operation is presented on a separate page of Schedule C-4.

<u>Schedule C-5, General Inflation Adjustment (Water and Wastewater)</u>

Q. Please explain the adjustment to remove the impact of general inflation that Aqua included in deriving its FPFTY expense.

A. In Aqua's application, on Schedule C-4 of Aqua Exhibits 1-A through 1-G, Aqua included two years, April 1, 2021 to March 31, 2022 and April 1, 2022 to March 31, 2023 for general blanket inflation on expenses for which Aqua did not identify

specific changes. My adjustment on Exhibit LA-2, Schedule C-5 removes Aqua's adjustment for estimated blanket inflation from FPFTY expenses. As shown on Schedule C-5, FPFTY expenses are reduced by $1.07 million to remove the impact of blanket general inflation.

Q. Has the Commission removed utility adjustments for generalized inflation in other cases?

A. Yes. The Commission disallowed blanket generalized inflation adjustments in Pa PUC v. PGW, 2007 Pa. PUC LEXIS 45 (2007), Pa. PUC v. Philadelphia Electric Co., 58 Pa. PUC 7 (1983), and Pa. PUC v. Philadelphia Electric Co., 1990 Pa. PUC LEXIS 155 (1990). In those cases, the Commission found that using a blanket general inflation factor is too speculative in nature. The Commission did allow an inflation adjustment in a recent case (Pa. PUC v. PECO Energy Co. – Gas Division, R-2020-3018929); however, that inflation adjustment used a more targeted approach and was not a blanket inflation adjustment like the adjustment that Aqua has proposed in this case.

<u>Schedule C-6, Revenue for FPFTY Metered Water Sales (Water)</u>

Q. Please explain the adjustment to FPFTY Revenue for metered Water Sales Revenue.

A. On Exhibit 1-A, Schedule B-7 in Aqua's application, Aqua made an adjustment to FPFTY Revenue to remove the impact of the COVID-19 pandemic on metered customer water sales. In its adjustment, Aqua removed $11.03 million of water

residential utility revenue and added $9.747 and $1.217 million of Commercial and Public Authority revenue for metered water sales, respectively, on the basis that the FPFTY sales levels would reflect pre-pandemic water sales levels. As shown on Exhibit LA-2, Schedule C-6, I have accepted Aqua's adjustment for Commercial and Public Authority water sales revenue to reflect pre-pandemic levels of water sales for the FPFTY. However, for residential water sales revenue, I have only reflected 75% of Aqua's proposed adjustment on the basis that residential customers in some proportion are continuing to spend more time at home and would thus continue to use additional quantities of water in the FPFTY compared with pre-pandemic levels. This adjustment increases residential revenue from metered water sales by $2.757 million, as shown on Exhibit LA-2, Schedule C-6.

Q. What was Aqua's basis for reducing HTY residential meter water sales?

A. Aqua's response to OCA-IV-18 states that:

> The Company expects usage to return to normal levels by class post pandemic. Therefore, the Company adjusted usage to pre-pandemic levels based on the adjustment in Schedule 6. The Company has projected no other adjustments due to COVID-19 for the consumption of the Residential, Commercial and Public classes in 2020, HTY 2021, FTY 2022 and FPFTY ending March 31, 2023.

Q. Did Aqua indicate in its responses to other OCA data requests that Aqua has <u>not</u> reflected adjustments for estimated declining residential per-customer usage?

A. Yes. Aqua's responses to OCA-IV-14 and 17 indicate that Aqua has not reflected <u>any</u> impact of estimated declining residential water usage. Aqua indicates that it

would typically reflect the impact of estimated declining customer water usage in its filing, but due to the unusual effects of the COVID-19 pandemic, Aqua states that the Company has refrained from doing so. However, in attempting to reduce HTY residential metered water sales by 895,854,900 gallons in its adjustment on Schedule 6, page 2 of 3, Aqua has in fact reduced HTY residential water sales in deriving its proposed FPFTY levels of usage. Based on the increased residential water usage in 2020, it is unreasonable for Aqua to reduce HTY metered residential water sales by such a large quantity in its attempt to derive sales levels for the FPFTY.

Q. What evidence is there that Aqua's metered residential water sales are higher than pre-pandemic levels?

A. Aqua reported metered residential water sales for 2020 of 19.552 billion gallons versus 18.370 billion gallons in 2019, a pre-pandemic period. This is an increase in metered residential water sales of 1,181,614,000 gallons, or approximately 6.4%. Metered residential water sales increased in 2020 during the pandemic in part as a result of people staying at home and consuming more water at their residences. Aqua's presumption that none of that 6.4% year-over-year increase in residential metered water sales would continue beyond 2020 and into the FPFTY does not seem realistic. A more refined quantification of how increasing residential metered water sales from 2020 over the 2019 pre-pandemic year should impact the FPFTY could likely benefit from additional information on monthly metered water sales in 2021. Using the available information, I have adjusted Aqua's proposed reduction to residential metered water sales by only reflecting 75% of the reduction. The

adjustment increases revenue for residential metered water sales at current rates by $2.757 million as shown on Schedule C-6.

<u>Schedule C-7, Purchased Power Expense (Water)</u>

Q. Does the adjustment to revenue from metered water sales have an impact on FPFTY Purchased Power Expense?

A. Yes. As shown on Exhibit LA-2, Schedule C-7, the adjustment for residential metered water sales results in an increase to Purchased Power Expense of $96,312.

<u>Schedule C-8, Chemical Expense (Water)</u>

Q. Does the adjustment to revenue from metered water sales have an impact on FPFTY Chemical Expense?

A. Yes. As shown on Exhibit LA-2, Schedule C-8, the adjustment for residential metered water sales results in an increase to Chemical Expense of $66,787.

<u>Schedule C-9, Universal Service Program Expansion (Water and Wastewater)</u>

Q. Do you have an adjustment to Aqua's revenue at current rates or to Aqua's FPFTY operating expenses related to the recommendations of OCA witness Roger Colton concerning expansions to Aqua's Universal Service Program?

A. No. We had reserved Exhibit LA-2, Schedule C-9, for potential adjustments to Aqua's revenue at current rates or to FPFTY operating expenses that may have resulted from the recommendations of OCA witness Roger Colten concerning revisions to and expansions of Aqua's proposed Universal Service Programs. However, upon discussions with the OCA and Mr. Colton, it has been determined

that impacts from Mr. Colton's recommendations concerning the expansion of customer bill discounts and changes to Aqua's proposed Universal Service Programs relate to prospective rate design for Aqua's water and wastewater utility operations, rather than adjustments to Aqua's FPFTY cost of service and revenue requirement. Consequently, we are not presenting an adjustment on Schedule C-9 of Exhibit LA-2.

<u>Schedule C-10, Advertising Expense (Water and Wastewater)</u>

Q. What has Aqua requested for FPFTY advertising expense?

A. As shown in its response to I&E-RE-33-D, Aqua has requested FPFTY advertising expense of $368,810 for its water utility and $7,500 for its wastewater utility operations.

Q. How does Aqua's requested amount for FPFTY advertising expense compare with the amounts Aqua shows for the HTY and FTY?

A. Aqua had zero advertising expense for the HTY and FTY for the wastewater utility. The Company's proposed $7,500 for the FPFTY for the wastewater utility is apparently for a new item, "Explanation of billing practices, rates, rules and regulations." Similarly, Aqua shows no amount for advertising expense for the HTY or FTY for its water utility for that category: "Explanation of billing practices, rates, rules and regulations." Aqua, however, proposes $75,000 for that category of advertising for the FPFTY. Aqua's water utility advertising expense for the FPFTY also includes amounts for "Public Health and Safety" and "Other Advertising Programs" which Aqua also shows it had expenses for in the HTY and FTY.

Q. Are you recommending an adjustment to Aqua's proposed FPFTY advertising expense?

A. Yes. As shown on Exhibit LA-2, Schedule C-10, since Aqua had no amounts in the "Explanation of billing practices, rates, rules and regulations" in either the HTY or FTY, I am recommending normalizing those FPFTY amounts for this new advertising expense over three years, for an allowance of $25,000 in the FPFTY for the water utility and $2,500 for the wastewater utility. As shown on Schedule C-10, this adjustment reduces Aqua's proposed advertising expense for the water utility by $50,000 and for the wastewater utility by $5,000.

<u>Schedule C-11, Payroll Expense – Vacant Positions (Water and Wastewater)</u>

Q. Did the Company make an adjustment for payroll expense?

A. Yes. As discussed on pages 10-11 of the Direct Testimony of Company witness Feeney, the Company's filing includes an adjustment for payroll expense, which includes the salaries and wages associated with Aqua's present complement of authorized positions. Specifically, for non-union employees, the Company started with actual wage rates as of April 1, 2021 and annualized payroll expense using those rates. In addition, for the FPFTY, the Company reflected an anticipated wage increase for all employees and annualized payroll expense using those rates as well. These adjustments include short-term incentive compensation for eligible employees.

For union employees, the Company's payroll expense was annualized based on the pay rates included in the collective bargaining agreements in place for each of Aqua's seven unions.

The non-union and union FPFTY gross payroll amounts were then reduced by the capitalized and non-operating labor reflected in the HTY. Finally, on page 11 of her testimony, Ms. Feeney stated that the gross payroll amounts reflect a reasonable vacancy adjustment that is in line with the Company's actual experience.

Q. What vacancy rate did the Company use in its calculation of gross payroll for water and wastewater operations?

A. As shown in the Company's electronic Excel file attachment "Highly Confidential I&E-RE-16-REVISED, Attachment 2 - Exhibit 2", the Company used a vacancy rate of 2.50 percent.[7]

Q. Do you agree with the vacancy rate used by the Company in its payroll expense adjustment?

A. No. I do not agree with the vacancy rate used by the Company in its payroll expense adjustment. In its response to OCA-XIII-8, the Company stated that the 2.50 percent vacancy rate is the rate used by Aqua in creating its operating budget. Instead, I used a vacancy rate of 2.88 percent, the calculation of which is shown in the response to I&E-RE-22-D. According to that response, the 2.88 percent vacancy rate relates to the HTY and thus, appears to reflect Aqua's actual experience as claimed by Ms. Feeney in her direct testimony. The 2.88 percent vacancy rate is based on the difference between actual regular hours and authorized regular hours during the HTY as shown below:

[7] The OCA has confirmed with Aqua PA that the vacancy rate taken from I&E-RE-16 is not confidential.

Description	Amount	
Authorized Regular Hours	1,208,480	
Actual Regular Hours	1,173,669	
Vacancy Rate	34,811	2.88%
Source: I&E-RE-22-D		

Q. Did you apply the 2.88 percent vacancy rate to the Company's proposed FPFTY gross payroll amount for non-union seasonal employees?

A. No. Upon reviewing the non-union payroll expense data on Company Exhibit 2, Schedule 2, I noted that the Company's proposed FTY and FPFTY gross payroll expense included 33 seasonal positions, each in the amount of $7,280 for a total of $240,240 ($7,280 x 33). However, the column representing the HTY ended March 31, 2021 on Exhibit 2, Schedule 2 reflected $0 for each of these 33 line items. According to the Company's response to I&E-RE-19-D, these amounts represent seasonal employee positions for the FTY[8] and these seasonal positions were vacant as of March 31, 2021 due to the seasonal employment period running from mid-May through mid-September.

Q. Do the 33 seasonal positions for which Aqua included payroll cost represent actual or authorized employees?

A. The 33 seasonal positions represent authorized positions rather than actual employees. Specifically, the response to I&E-RE-97-D which requested that Aqua provide monthly labor data related to the number of employees beyond the HTY

[8] As noted above, Aqua also reflected these seasonal payroll expense amounts in the FPFTY column of Exhibit 2, Schedule 2.

ended March 31, 2021 up to the most recent month, broke out the requested labor data for actual and authorized employees on a quarterly basis from the first quarter of 2019 through the third quarter of 2021 on Attachment 1.[9]

Q. What is shown on Attachment 1 to the response to I&E-RE-97-D as it relates to authorized and actual seasonal positions?

A. I have replicated Attachment 1 to the response to I&E-RE-97-D as it relates to seasonal positions in the table below:

Description	3/30/2019	6/30/2019	9/30/2019	12/31/2019	3/31/2020	6/30/2020
Actual Seasonal Positions	0	0	0	0	0	0
Authorized Seasonal Positions	0	34	0	0	0	33
Description	**9/30/2020**	**12/31/2020**	**3/30/2021**	**6/30/2021**	**9/30/2021**	
Actual Seasonal Positions	0	0	0	11	0	
Authorized Seasonal Positions	0	0	0	33	0	
Source: I&E-RE-97-D						

As shown in the table above, the authorized seasonal positions ranged from 34 to 33 positions in each quarter ended June 30, 2019, June 30, 2020 and June 30, 2021. However, Aqua's response shows that the Company only had 11 actual seasonal positions at the end of the second quarter of 2021. Actual seasonal positions as of June 30, 2019 and 2020 were zero, as shown in the above chart, despite the fact that Aqua had budgeted for 34 and 33 authorized seasonal positions for the summer of 2019 and 2020. A comparison of actual with authorized seasonal positions, such as

[9] The response to OCA-XIII-9 stated that the Company does not report the requested labor data on a monthly basis.

the one shown in the above chart, indicates that using authorized seasonal positions would overstate payroll expense.

Q. What do you recommend as it relates to the seasonal positions included in the Company's proposed FPFTY gross payroll expense?

A. I recommend that in the Company's proposed FPFTY gross payroll expense be decreased from 33 seasonal positions to 11 to reflect the most current actual data.

Q. What adjustment are you recommending for payroll expense for seasonal position?

A. As shown on Exhibit LA-2, Schedule C-11, page 4, reducing the non-union seasonal positions from 33 to 11 decreases Aqua's requested payroll expense by $147,673 for water operations. In addition, as shown on Exhibit LA-2, Schedule C-11, page 5, reducing the non-union seasonal positions from 33 to 11 decreases payroll expense by $12,487 for wastewater operations.

Q. Getting back to the discussion of the appropriate vacancy rate to use, please explain your adjustment to payroll expense as it relates to the vacancy rate for positions other than seasonal positions.

A. As discussed above, the 2.88 percent vacancy rate is based on the difference between actual regular hours and authorized hours during the HTY. Therefore, I applied the 2.88 percent vacancy rate to the Company's FPFTY gross payroll amounts for union

and non-union employees and also reduced such amounts for capitalized and non-operating labor.

As shown on Exhibit LA-2, Schedule C-11, page 2, my adjustment related to the vacancy rate decreases payroll expense by $119,358 for non-union and union employees in the Company's water operations. In addition, as shown on Exhibit LA-2, Schedule C-11 page 3, my adjustment decreases payroll expense by $6,855 for non-union and union employees in the Company's wastewater operations

`Q. Please summarize your adjustment for vacancies and vacant seasonal positions.

A. As shown on Exhibit LA-2, Schedule C-11, page 1, when combined with the adjustment related to removing seasonal positions, my overall adjustment for vacancies decreases payroll expense by $267,031 for water operations.

As also shown on Exhibit LA-2, Schedule C-11, page 1, my recommended adjustment decreases payroll expense by $19,342 for wastewater operations.

<u>Schedule C-12, Stock-Based Compensation Expense (Water and Wastewater)</u>

Q. Please explain your adjustment to stock-based compensation expense.

A. As shown on Exhibit LA-2, Schedule C-10, I have removed all stock-based compensation expense. Specifically, this adjustment decreases Aqua's FPFTY cost of service by $780,493 for water operations. As shown on Exhibit LA-2, Schedule C-10, this adjustment decreases Aqua's FPFTY cost of service by $66,000 for wastewater operations.

Q. What types of stock-based compensation costs did Aqua include in its FPFTY cost of service?

A. According to the response to I&E-RE-64-D, the Company included costs for (1) stock option compensation, (2) performance share units ("PSU"), and (3) restricted stock units ("RSU").

Q. Did the Company provide a copy of its stock-based compensation plan documents?

A. Yes. In its Highly Confidential response to OCA-IV-5, the Company provided (1) Attachment 4 – Performance-Based Share Unit Grant Terms and Conditions (2021 PSU Agreement) as part of its 2009 Omnibus Equity Compensation Plan, and (2) Attachment 5 - Restricted Stock Unit Grant Terms and Conditions as part of its 2009 Omnibus Equity Compensation Plan.[10] I have included those documents in Highly Confidential Exhibit LA-4, attached to my direct testimony.

Q. Did the Company provide compensation plan documents related to stock options?

A. No, the Company did not provide compensation plan documents related to stock options. However, on page 58 of Essential Utilities Proxy Statement dated March 22, 2021,[11] it states that stock options are being removed from the long-term incentive compensation program:

[10] The OCA has confirmed with Aqua PA that the identification of the exhibits attached to OCA-IV-5 is not confidential.

[11] https://www.essential.co/static-files/18867cab-fde9-441f-a7ba-4f6b47586a4f

> Beginning in 2020, under the redesigned long-term incentive program, stock options have been removed from the program and instead a heavier emphasis is placed on performance share units and restricted stock units. This approach has become the foundation of the long-term incentive program and will continue in 2021.

Q. Please provide a description of the Performance Share Units.

A. On page 56 of Essential Utilities, Inc. Proxy Statement, it states the following with regard to Performance Share Units ("PSU"):

> Performance share or performance share unit grants (PSU) (together referred to as performance shares) provide the named executive officer with the opportunity to earn awards of shares based on Company performance against designated pre-determined, objective metrics. Participants are granted a target number of shares or units that can increase to 200% of the target or decrease to zero based on the Company's actual performance compared to the designated metrics. Dividends or dividend equivalents, as applicable, on the performance shares accrue and will be paid when the performance shares are earned and paid based on the number of shares actually earned, if any. Performance shares vest three years after the grant date.

Q. Please provide a description of the Restricted Stock Units.

A. On page 59 of Essential Utilities, Inc. Proxy Statement, it states the following with regard to Restricted Stock Units ("RSU"):

> Annual restricted share or restricted stock unit grants (together referred to as restricted shares) entitle the named executive officer to receive the number of shares granted at the end of a given period of time, or in increments over a period of years on the anniversaries of the grant date, provided the named executive officer remains an employee of the Company. However, if separation is due to death, disability, retirement or termination following a Change in Control, then acceleration of the lapse of forfeiture restrictions occurs as set forth in the Plan.

- Dividends or dividend equivalents, as applicable, are accumulated and paid when the restricted shares are paid.
- The restricted shares to the other named executive officers (other than the Chief Executive Officer) vest 100% after three years, with vesting subject solely to continued service with the Company.
- The restricted shares to the Chief Executive Officer vest 100% after three years, with vesting subject to continued service with the Company and the Company's achievement of at least an adjusted return on equity equal to 150 basis points below return on equity granted by the Pennsylvania Public Utility Commission during the Company's Pennsylvania water subsidiary's last rate proceeding, subjected to adjustments as allowed under the Plan.
- The return on equity will be calculated in the same manner as it is calculated for the purpose of determining the return on equity required for the vesting of stock options.

Q. Has Aqua provided any studies that demonstrate a quantitative benefit to ratepayers from the provision of stock-based compensation to Aqua and Essential Utilities, Inc. executives?

A. No.

Q. Please discuss the reasons for removing stock-based compensation from Aqua's FPFTY cost of service.

A. Ratepayers should not be required to pay Aqua and Essential Utilities executive or management compensation that is based on the performance of the Company's (or its parent company's) stock price, or that has the primary purpose of benefitting the parent company's shareholders and aligning the interests of participants with those of such shareholders.

Charging a shareholder-oriented expense to Aqua's revenue requirement is not good regulatory policy.

Aqua has failed to provide any studies that demonstrate a quantitative benefit to Aqua's ratepayers from the provision of stock-based compensation directly charged to the Company and/or allocated to Aqua from affiliates.

Additionally, prior to being required to expense stock options for financial reporting purposes under Statement of Financial Accounting Standards No. 123 Revised (SFAS 123R)[12], the cost of stock-option based compensation was typically treated as a dilution of shareholders' investments, i.e., it was a cost borne by shareholders. While SFAS 123R now requires stock-option based compensation cost to be expensed on a company's financial statements, this does not provide a reason for shifting the cost responsibility for stock-based compensation, such as stock options, from shareholders to utility ratepayers.

As noted above, in 2020 the Company removed stock options from the long-term incentive program in favor of a heavier emphasis on the PSUs and RSUs. As a result, compensation expense for stock options grants to Aqua and Essential Utilities executives apparently has been discontinued and will not be incurred on a going-forward basis.

Q. Please summarize your recommended adjustment for Stock-Based Compensation expense.

A. As shown on Exhibit LA-2, Schedule C-12, column A, line 6, Aqua's FPFTY cost of service is reduced by $780,493 to remove stock-based compensation from water

[12] This is now known as Accounting Standards Codification (ASC) 718.

operations. In addition, as shown on Exhibit LA-2, Schedule C-12, column B, line 6, Aqua's FPFTY cost of service is reduced by $66,000 to remove stock-based compensation from wastewater operations.

Q. Is there a related adjustment to payroll tax expense?

A. Yes. As discussed below, my recommended adjustment to stock-based compensation expense results in a related adjustment to payroll tax expense as shown on Exhibit LA-2, Schedule C-13.

<u>Schedule C-13, Payroll Tax Expense (Water and Wastewater)</u>

Q. Please explain your adjustment to Aqua's payroll tax expense.

A. My recommended adjustment to Aqua's payroll tax expense[13] is made in conjunction with the adjustments that I am recommending related to (1) reducing the number of non-union seasonal employees, (2) the vacancy rate used for payroll expense, and (3) removing stock-based compensation from the FPFTY cost of service.[14] As shown on Exhibit LA-2, Schedule C-13, I have reduced Aqua's payroll tax expense by $93,467 for water operations and by $7,448 for wastewater operations for an overall reduction of $100,915.

<u>Schedule C-14, Employee Group Insurance (Water and Wastewater)</u>

Q. Please explain your adjustment to employee group insurance expense for Aqua's water utility operations.

[13] The payroll tax expense adjustment is comprised of adjustments to FICA (Social Security and Medicare), State Unemployment Tax Act ("SUTA") and the Federal Unemployment Tax Act ("FUTA") expense.
[14] The stock-based compensation portion of the adjustment to payroll tax expense relates only to FICA taxes.

A. As discussed on page 17 of the Direct Testimony of Company witness Packer, the Company proposed an adjustment for employee group insurance for water operations in which it used FTY contract prices and subtracted the employee co-pay as well as the portion not charged to operations. In addition, the Company applied a vacancy credit using the same 2.50 percent vacancy rate that it used for its payroll expense adjustment.

Upon reviewing the Company's calculations, which were provided in the Highly Confidential Aqua Excel file attached to the Company's response to I&E-RE-16-D, I noted that Aqua used the same 2.50 percent vacancy rate that it used for its proposed payroll adjustment.[15] As discussed previously, I am recommending a 2.88 percent vacancy adjustment to payroll expense based on the Company's response to I&E-RE-22-D. This same vacancy rate should be used in the calculation of the FPFTY employee group insurance for water operations.

As shown on Exhibit LA-2, Schedule C-14, this adjustment decreases Aqua's proposed employee group insurance expense for water operations by $23,285.

Q. Did Aqua propose a similar adjustment to employee group insurance for its wastewater operations?

A. No. Schedule C-8.1 of Exhibit 1-B Wastewater Base reflects the amount of $1,263,638 for the FPFTY, which is described by Aqua as "wastewater intracompany benefits."

[15] As noted above, the vacancy rate is not considered confidential.

Q. If Aqua did not propose a similar adjustment to employee group insurance for wastewater operations, why are you including the discussion of intracompany wastewater benefits in this section of your testimony?

A. I am including the discussion of the intracompany wastewater benefits in this section of my testimony to be consistent with how Aqua presented its proposed adjustment for this item in its filing. Specifically, the Company's proposed adjustment for the intracompany wastewater benefits in Exhibit 1-B Wastewater Base is presented on Schedule C-8.1, which is the same schedule used by Aqua in its employee group insurance adjustment as shown on Exhibit 1-A for water operations.

Q. How did the Company calculate the wastewater intracompany benefits amount of $1,263,638?

A. The Company's calculation of the wastewater intracompany benefits is shown in the table below:

Description	Amount	Reference
Expensed Non-Union Payroll Expense	$1,004,479	Exh. 1-B WW Base, Sch. C-4.5
Expensed Union Payroll Expense	$1,101,584	Exh. 1-B WW Base, Sch. C-4.5
Total Expensed Payroll Expense for Wastewater Operations	$2,106,063	
Intercompany Benefits Rate	60%	Exh. 1-B WW Base
Wastewater Intracompany Benefit	$1,263,638	Exh. 1-B WW Base, Sch. C-8.1

Q. Are you proposing an adjustment to the Company's wastewater intracompany benefits calculation?

A. Yes, I am proposing an adjustment to the Company's wastewater intracompany benefits calculation. Specifically, as discussed above with respect to the adjustment for water and wastewater utility payroll expense presented on Exhibit LA-2,

Schedule C-11, I applied a different vacancy rate (2.88 percent versus Aqua's proposed 2.50 percent) to derive FPFTY payroll expense, which reduced Aqua's requested payroll expense for both water and wastewater operations. Using the same method for deriving intercompany benefits expense for the wastewater utility operations that Aqua used, as described above, I calculated wastewater intracompany benefits of $1,259,525 as shown in the table below:

Description	Amount	Reference
Expensed Non-Union Payroll Expense	$1,001,106	OCA Sch. C-11
Expensed Union Payroll Expense	$1,098,103	OCA Sch. C-11
Total Expensed Payroll Expense for Wastewater Operations	$2,099,209	
Intercompany Benefits Rate	60%	Exh. 1-B WW Base
Wastewater Intracompany Benefit	$1,259,525	

As shown on Exhibit LA-2, Schedule C-14, the result of using my recommended FPFTY payroll expense results in decreases the wastewater intracompany benefits expense by $4,113 ($1,263,638 - $1,259,525).

<u>Schedule C-15, General Insurance (Water and Wastewater)</u>

Q. Did the Company include an adjustment for insurance expense?

A. Yes. As discussed on page 7 of the Direct Testimony of Company witness Henkel, Aqua has insurance policies for General Liability, Auto Liability, Workers Compensation and Miscellaneous Other (Surety Bonds, Property, etc.). Mr. Henkel states that for the periods ended December 31, 2017 through the period ending December 31, 2021, Aqua's insurance expense realized an average year-over-year increase of 5.97 percent. This percentage annual escalation rate was then applied by Aqua to actual premiums expense in 2021 to derive the Company's FTY and FPFTY

insurance amounts, less the portion of insurance costs not charged to operating expense.

Q. Do you agree with the Company's use of a 5.97 percent annual escalation rate, that was based five years, 2017-2021 to derive the proposed FPFTY amount for insurance expense?

A. No, I do not. Using information as far back as for 2017 and 2018 as Aqua has done, can be outdated and not representative of more recent information or current trends. On Exhibit LA-2, Schedule C-15, I have used a three-year average of year-over-year increases from the period 2019-2020-2021 to project the general insurance expense increase from the Company's FTY amounts to the FPFTY.

Q. Please explain your adjustment.

A. Using actual insurance expense that was charged to Aqua for fiscal years 2019, 2020 and 2021 that was provided in response to I&E-RE-40-D, I calculated a three-year average of year-over-year increases to insurance expense of 4.38 percent, which I applied to the Company's FTY amounts to derive the insurance expense for the FPFTY. I then the portion of insurance cost not charged to operating expense using the Company's capitalization rate of 30 percent.

As shown on Exhibit LA-2, Schedule C-15, my adjustment reduces Aqua's proposed insurance expense for the FPFTY by $71,428 for water operations and by $710 for wastewater operations.

Schedule C-16, Rate Case Expense (Water and Wastewater)

Q. What has Aqua requested for rate case expense?

A. Aqua has requested a total allowance for rate case expense of $2.2 million normalized over 3 years. This would result in a rate case expense of $671,073 per year allocated to Water Operations and $62,260 per year allocated to Wastewater Operations. Exhibit LA-2, Schedule C-16, Column A, lines 1-11, replicates the derivation of Aqua's request rate case expense.

Q. Please explain your adjustment to rate case expense.

A. As shown on Exhibit LA-2, Schedule C-16, Column B, I have removed $100,000 for Other Consultants. As of September 30, 2021, the Company's response to OCA-IV-23 shows that Aqua had incurred zero costs for Other Consultants. I also note that Aqua's response to I&E-RE-9 Attachment 1 shows that Aqua's budgeted amounts for Other Consultants in Aqua's last three rate cases were overstated. Additionally, I have removed Aqua's requested $65,000 for Miscellaneous. As of September 30, 2021, Aqua had only incurred $453 for Miscellaneous. These adjustments reduce Aqua's requested $2.2 million for rate case expense by $165,000.

Q. How do Aqua's claimed amounts for rate case expense compare with the actually incurred amounts in prior Aqua rate cases?

A. The Company's response to I&E-RE-9 Attachment 1 shows that Aqua's claimed amounts for rate case expense in each of Aqua's last three rate cases were overstated. Aqua's 2018 claimed rate case expense amount of $1.975 million overstated Aqua's actual expense of approximately $1.502 million by $473,000.

Q. Could a reduction of only $165,000 to Aqua's claimed $2.2 million for rate case expense in the current case result in Aqua's claim being overstated?

A. Yes, it could. A reduction of only $165,000 to Aqua's claimed amount of $2.2 million may continue to overstate the Company's actual rate case expense for the current rate case. Aqua's last three rate cases were settled which contributed to the Company's claimed rate case expense being significantly higher than the actual amounts reported in the response to I&E-RE-9. Aqua's response to I&E-RE-12 identifies the Company's projected rate case expense for the current case if it is settled at various stages. Aqua's proposed rate case expense may thus need further reduction if it appears that the current rate case will also be settled.

Q. What period have you used for normalizing the rate case expense?

A. I recommend that Aqua's rate case expense be normalized over a 3.3-year period rather than Company's request to normalize rate case expense over a three-year period. The filing interval from Aqua's 2011 rate case to Aqua's 2019 rate case is approximately 7 years (using the rate effective dates of June 8, 2012 and May 24, 2019). Three rate cases in approximately 9.8 years equates to an average filing interval of about 3.3 years between rate cases:

Aqua PA Rate Case Filing Interval			
Description	Effective date	No. of Days	Approx. No. of Years
2011 rate case	6/8/2012		
2018 rate case	5/24/2019	2,541	7.0
2021 rate case - estimated	4/1/2022	1,043	2.9
Number of days		3,584	
Days per year		365	
Number of years		9.8	9.8
Number of cases		3	3
Average filing interval, in years		3.3	3.3
Source: I&E-RE-9, Attachment 1			

Q. Please summarize your adjustment for rate case expense.

A. As shown on Exhibit LA-2, Schedule C-16, my recommended adjustment to rate case expense reduces operating expense by $106,762 for Aqua's Water Operations and by $9,905 for Wastewater Operations, as shown in column D, lines 11 and 12, respectively.

<u>Schedule C-17, Non-Rate Case Legal Expense (Water)</u>

Q. What has Aqua stated concerning how it has treated legal and consulting expense related to acquisitions?

A. Aqua's response to OCA-IV-16 refers to the Company's responses to OCA-IV-25 and OCA-IV-26 and states that: "All legal expenses related to acquisitions are charged below the line and are not included in the Company's claim."

Q. What has Aqua requested for non-rate case legal expense?

A. Aqua has requested $644,475 for non-rate case legal expense for the FPFTY for its water utility operations. Aqua's request is shown on Company Exhibit 1-A, Schedule C-8.1. Aqua's response to OCA-IV-25 explains that:

> All non-rate case legal expenses recorded by Aqua are charged to account 633800 of the Water Operations. Aqua does not break out the legal expenses it incurs by division. As stated in Schedule C-9 of Exhibit 1-A, the Company plans to incur $644,475 of legal expenses in both the FTY and FPFTY.
>
> Aqua does not charge any legal expenses to Wastewater Operations. All legal expenses are charged to Water Operations.

Aqua's response to I&E-RE-55 indicates that Aqua has based its proposed FTY and FPFTY amount of $644,475 of legal expenses on a three-year average of amounts for the twelve months ended March 31, 2019, March 31, 2020 and March 31, 2021. Of those, three periods, the most remote one from the FPFTY, i.e., the 12 months ending March 31, 2019, at $694,447, was notably the highest of the three periods. Thus, Aqua has attempted to have a higher amount of non-rate case legal expense in the FPFTY by reaching back to the 12 months ending March 31, 2019 and including that period, which had high legal costs, in an average.

Q. How much non-rate case legal expense did Aqua record in account 633800 in 2019 and 2020?

A. As shown on Exhibit LA-2, Schedule C-17, page 2, in 2019 Aqua recorded $545,550 in account 633800. The amount for 2020 was $587,742. An average of the 2019 and 2020 calendar year amounts for the non-rate case legal expense that Aqua recorded

in account 633800 is $566,646 as shown on Exhibit LA-2, Schedule C-17, page 2, line 14.

Q. How much non-rate case legal expense did Aqua record in account 633800 in the 12 month periods ending March 31, 2020 and March 31, 2021?

A. As shown on Exhibit LA-2, Schedule C-17, page 2, in the 12-month period ending March 31, 2020 Aqua recorded $591,973 in account 633800. The amount recorded by Aqua in that account was $647,015 for the 12-month period ending March 31, 2021. An average of the expense account 633800 for the two 12 month periods ending March 31 for the non-rate case legal expense that Aqua recorded in account 633800 is $619,494 as shown on Exhibit LA-2, Schedule C-17, page 2, line 28.

Q. Are you recommending an adjustment for Aqua's requested non-rate case legal expense?

A. Yes. As shown on Exhibit LA-2, Schedule C-17, page 1, I am recommending that Aqua's requested amount of $644,475 for non-rate case legal expense be reduced by $24,981 to reflect an allowed amount for the FPFTY of $619,494 that is based on the average amounts recorded by Aqua for the two 12 month periods ending March 31, 2020 and 2021, as shown on Exhibit LA-2, Schedule C-17, page 2, line 28.

<u>Schedule C-18, Supplemental Executive Retirement Plan Expense – Executive Compensation (Water and Wastewater)</u>

Q. Does Aqua's application charge ratepayers for Essential Utilities and Aqua top executive compensation in the form of expenses for a Supplemental Executive Retirement Plan Expense ("SERP")?

A. Yes. Aqua's supplemental response to OCA-VII-46 shows that Aqua has reflected SERP expense in the FPFTY of $97,014 for Aqua Nonqualified Service Costs in account 604. Additionally, that response shows that Aqua has included in FPFTY expenses $598,598 and $57,050 in accounts 634 and 734 for its water and wastewater utility operations, respectively. The non-confidential (i.e., public) portion of Aqua's supplemental response to OCA-VII-46 is included with my testimony in Exhibit LA-3.

Q. Has Aqua provided a listing of the current and former executives (and/or the executive spouses) for whom the SERP expense is being incurred?

A. Yes. In the Highly Confidential Attachment 4 to Aqua's supplemental response to OCA-VII-46,[16] Aqua has included a listing of the current and former executives (and/or the executive spouses) for whom the SERP expense is being incurred. The attachments to Aqua's supplemental response to OCA-VII-46 that Aqua has designated as Highly Confidential are included in Exhibit LA-4, attached to my testimony. Those materials include the actuarial report for the SERP, which is referred to as a "Nonqualified Pension Plan" since it represents additional executive retirement benefits beyond those that are provided to employees in the Company's qualified pension plans.

Q. Can you please provide a general description of SERPs?

[16] The OCA has confirmed with Aqua that my references to the attachments to OCA-VII-46 (revised) do not address confidential material.

A. The SERP provides supplemental retirement benefits for select highly compensated executives. Generally, SERPs are implemented for executives to provide retirement benefits that exceed amounts limited in qualified plans by Internal Revenue Service ("IRS") limitations. Companies usually maintain that providing such supplemental retirement benefits to executives is necessary in order to ensure attraction and retention of qualified employees. Typically, SERPs provide for retirement benefits in excess of the limits placed by IRS regulations on pension plan calculations for salaries in excess of specified amounts. IRS restrictions can also limit the Company 401(k) contributions such that the Company 401(k) contribution as a percent of salary may be smaller for a highly paid executive than for other employees.

Q. Should the SERP expense for Aqua and Essential Utilities current and retired executives be borne by Aqua PA ratepayers?

A. No. The provision of additional compensation to Aqua and Essential Utilities highest paid current and former executives to remedy a perceived deficiency in retirement benefits relative to the Company's other employees is not a reasonable expense that should be recovered in rates. Without the SERP, the Company's and its affiliate's executive officers still enjoy the same retirement benefits available to any other Aqua employee and the attempt to make these executives "whole" in the sense of allowing a greater percentage of retirement benefits does not meet the test of reasonableness. If the Company wishes to provide additional retirement benefits above the level permitted by IRS regulations applicable to all other employees it may do so at the expense of its shareholders. However, it is not reasonable to place this additional burden on ratepayers. The issue is not whether the utility may provide

compensation to select executives in excess of the retirement limits allowed by the IRS, but whether ratepayers should be saddled with costs of executive benefits that exceed the treatment allowed for all other employees. If the Company chooses to do so, shareholders rather than ratepayers should be responsible for the retirement benefits afforded only to those executives.

Q. Please explain your recommended adjustment to remove the SERP expense.

A. As shown on Exhibit LA-2, on Schedule C-18, the FPFTY SERP expense amounts identified by Aqua in its supplemental response to OCA-VII-46 are being removed. This adjustment reduces Aqua's requested FPFTY expense for the water utility by $695,612 and for the wastewater utility by $57,050.

VI. ACT 40

Q. What do you address in this section of your testimony?

A. This section of my testimony addresses Act 40, which changes the way that federal income tax expense is calculated for ratemaking purposes for many Pennsylvania utilities that participate in a consolidated federal income tax return.

Q. Does Section 1301.1 impact the Company's Water and Wastewater DSICs?

A. I have been advised that the impact of Act 40 on the treatment of income tax deductions and credits in the DSIC calculation was raised in two cases involving FirstEnergy's and Newtown Artesian Water Company's DSICs. Those cases have been on appeal and have been remanded to the Commission for further

proceedings.[17] Pending the outcome of those proceedings, any necessary changes to Aqua's DSIC calculation and tariffs will need to be addressed in a future filing.

VII. COVID-19 DEFERRAL

Q. What has Aqua proposed for its COVID-19 Deferral?

A. Aqua has not requested recovery of its COVID-19 deferral in the current rate case. Rather, Aqua proposes to continue recording amounts into its COVID-19 deferral and to seek recovery in a future rate case.

Q. Should Aqua be allowed to continue recording amounts into its COVID-19 deferral for an indefinite period, such as through a future Aqua rate case?

A. No. Aqua's ability to continue recording costs into a deferral account needs to be limited. Allowing continual deferrals for an indefinite period beyond the FPFTY being used in the current Aqua base rate case should not be permitted. I recommend that if Aqua seeks to recover COVID-19 deferred costs, it make a claim for costs through the end of this case's FPFTY. In that filing, which should be submitted no later than with Aqua's next rate case, Aqua should also identify and reflect any cost savings as offsets to the corresponding categories of deferred costs. Specifically, savings in expenses, such as for travel and conferences, that Aqua realized due to changes to Aqua's operations during the pandemic, should be offset against Aqua's recorded COVID-19 deferral balances.

[17] McCloskey v. Pa. PUC, 2021 Pa. LEXIS 3071, *48.

Q. Are you in the process of identifying offsets that should be made to Aqua's COVID-19 deferral balances?

A. Yes. Discovery such as Aqua's responses to OCA-VII-30, 31, 32, 33, 34 and 42, OCA-X-7, 8, 9, and 10, OCA-XIII-7, and OCA-XIII-6 and 7 is still being accumulated and reviewed for the identification of adjustments to Aqua's COVID-19 deferral balances. The savings should be reflected when Aqua makes a claim for recovery, which I have recommended should occur no later than its next base rate case.

Q. Does it appear that Aqua paid special bonuses related to COVID-19?

A. Yes. Additional information concerning the special COVID-19 bonuses and whether Aqua has included any amounts in FPFTY rate base or operating expenses has been sought in OCA-XIII-6. A response to that request has not yet been received as of the date of this writing. I reserve the right to supplement my testimony on this matter.

Q. Does this conclude your direct testimony?

A. Yes, it does. However, I reserve the right to incorporate new information that may subsequently become available through outstanding discovery or otherwise.

Attachment RCS-1

QUALIFICATIONS OF RALPH C. SMITH

Accomplishments

Mr. Smith's professional credentials include being a Certified Financial Planner™ professional, a Certified Rate of Return Analyst, a licensed Certified Public Accountant and attorney. He functions as project manager on consulting projects involving utility regulation, regulatory policy and ratemaking and utility management. His involvement in public utility regulation has included project management and in-depth analyses of numerous issues involving telephone, electric, gas, and water and sewer utilities.

Mr. Smith has performed work in the field of utility regulation on behalf of industry, public service commission staffs, state attorney generals, municipalities, and consumer groups concerning regulatory matters before regulatory agencies in Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, Nevada, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, Washington DC, West Virginia, Canada, Federal Energy Regulatory Commission and various state and federal courts of law. He has presented expert testimony in regulatory hearings on behalf of utility commission staffs and intervenors on several occasions.

Project manager in Larkin & Associates' review, on behalf of the Georgia Commission Staff, of the budget and planning activities of Georgia Power Company; supervised 13 professionals; coordinated over 200 interviews with Company budget center managers and executives; organized and edited voluminous audit report; presented testimony before the Commission. Functional areas covered included fossil plant O&M, headquarters and district operations, internal audit, legal, affiliated transactions, and responsibility reporting. All of our findings and recommendations were accepted by the Commission.

Key team member in the firm's management audit of the Anchorage Water and Wastewater Utility on behalf of the Alaska Commission Staff, which assessed the effectiveness of the Utility's operations in several areas; responsible for in-depth investigation and report writing in areas involving information systems, finance and accounting, affiliated relationships and transactions, and use of outside contractors. Testified before the Alaska Commission concerning certain areas of the audit report. AWWU concurred with each of Mr. Smith's 40 plus recommendations for improvement.

Co-consultant in the analysis of the issues surrounding gas transportation performed for the law firm of Cravath, Swaine & Moore in conjunction with the case of Reynolds Metals Co. vs. the Columbia Gas System, Inc.; drafted in-depth report concerning the regulatory treatment at both state and federal levels of issues such as flexible pricing and mandatory gas transportation.

Lead consultant and expert witness in the analysis of the rate increase request of the City of Austin - Electric Utility on behalf of the residential consumers. Among the numerous ratemaking issues addressed were the economies of the Utility's employment of outside services; provided both written and oral testimony outlining recommendations and their bases. Most of Mr. Smith's recommendations were adopted by the City Council and Utility in a settlement.

Key team member performing an analysis of the rate stabilization plan submitted by the Southern Bell Telephone & Telegraph Company to the Florida PSC; performed comprehensive analysis of the Company's projections and budgets which were used as the basis for establishing rates.

Lead consultant in analyzing Southwestern Bell Telephone separations in Missouri; sponsored the complex technical analysis and calculations upon which the firm's testimony in that case was based. He has also assisted in analyzing changes in depreciation methodology for setting telephone rates.

Lead consultant in the review of gas cost recovery reconciliation applications of Michigan Gas Utilities Company, Michigan Consolidated Gas Company, and Consumers Power Company. Drafted recommendations regarding the appropriate rate of interest to be applied to any over or under collections and the proper procedures and allocation methodology to be used to distribute any refunds to customer classes.

Lead consultant in the review of Consumers Power Company's gas cost recovery refund plan. Addressed appropriate interest rate and compounding procedures and proper allocation methodology.

Project manager in the review of the request by Central Maine Power Company for an increase in rates. The major area addressed was the propriety of the Company's ratemaking attrition adjustment in relation to its corporate budgets and projections.

Project manager in an engagement designed to address the impacts of the Tax Reform Act of 1986 on gas distribution utility operations of the Northern States Power Company. Analyzed the reduction in the corporate tax rate, uncollectibles reserve, ACRS, unbilled revenues, customer advances, CIAC, and timing of TRA-related impacts associated with the Company's tax liability.

Project manager and expert witness in the determination of the impacts of the Tax Reform Act of 1986 on the operations of Connecticut Natural Gas Company on behalf of the Connecticut Department of Public Utility Control - Prosecutorial Division, Connecticut Attorney General, and Connecticut Department of Consumer Counsel.

Lead Consultant for The Minnesota Department of Public Service ("DPS") to review the Minnesota Incentive Plan ("Incentive Plan") proposal presented by Northwestern Bell Telephone Company ("NWB") doing business as U S West Communications ("USWC"). Objective was to express an opinion as to whether current rates addressed by the plan were appropriate from a Minnesota intrastate revenue requirements and accounting perspective, and to assist in developing recommended modifications to NWB's proposed Plan.

Performed a variety of analytical and review tasks related to our work effort on this project. Obtained and reviewed data and performed other procedures as necessary (1) to obtain an understanding of the Company's Incentive Plan filing package as it relates to rate base, operating income, revenue requirements, and plan operation, and (2) to formulate an opinion concerning the reasonableness of current rates and of amounts included within the Company's Incentive Plan filing. These procedures included requesting and reviewing extensive discovery, visiting the Company's offices to review data, issuing follow-up information requests in many instances, telephone and on-site discussions with Company representatives, and frequent discussions with counsel and DPS Staff assigned to the project.

Lead Consultant in the regulatory analysis of Jersey Central Power & Light Company for the Department of the Public Advocate, Division of Rate Counsel. Tasks performed included on-site review and audit of Company, identification and analysis of specific issues, preparation of data requests, testimony, and cross examination questions. Testified in Hearings.

Assisted the NARUC Committee on Management Analysis with drafting the Consultant Standards for Management Audits.

Presented training seminars covering public utility accounting, tax reform, ratemaking, affiliated transaction auditing, rate case management, and regulatory policy in Maine, Georgia, Kentucky, and Pennsylvania. Seminars were presented to commission staffs and consumer interest groups.

Previous Positions

With Larkin, Chapski and Co., the predecessor firm to Larkin & Associates, was involved primarily in utility regulatory consulting, and also in tax planning and tax research for businesses and individuals, tax return preparation and review, and independent audit, review and preparation of financial statements.

Installed computerized accounting system for a realty management firm.

Education

Bachelor of Science in Administration in Accounting, with distinction, University of Michigan, Dearborn, 1979.

Master of Science in Taxation, Walsh College, Michigan, 1981. Master's thesis dealt with investment tax credit and property tax on various assets.

Juris Doctor, cum laude, Wayne State University Law School, Detroit, Michigan, 1986. Recipient of American Jurisprudence Award for academic excellence.

Continuing education required to maintain CPA license and CFP® certificate.

Passed all parts of CPA examination in first sitting, 1979. Received CPA certificate in 1981 and Certified Financial Planning certificate in 1983. Admitted to Michigan and Federal bars in 1986.

Michigan Bar Association.

American Bar Association, sections on public utility law and taxation.

Partial list of utility cases participated in:

79-228-EL-FAC	Cincinnati Gas & Electric Company (Ohio PUC)
79-231-EL-FAC	Cleveland Electric Illuminating Company (Ohio PUC)
79-535-EL-AIR	East Ohio Gas Company (Ohio PUC)
80-235-EL-FAC	Ohio Edison Company (Ohio PUC)
80-240-EL-FAC	Cleveland Electric Illuminating Company (Ohio PUC)
U-1933	Tucson Electric Power Company (Arizona Corp. Commission)
U-6794	Michigan Consolidated Gas Co. --16 Refunds (Michigan PSC)
81-0035TP	Southern Bell Telephone Company (Florida PSC)
81-0095TP	General Telephone Company of Florida (Florida PSC)
81-308-EL-EFC	Dayton Power & Light Co.- Fuel Adjustment Clause (Ohio PUC)
810136-EU	Gulf Power Company (Florida PSC)
GR-81-342	Northern States Power Co. -- E-002/Minnesota (Minnesota PUC)
Tr-81-208	Southwestern Bell Telephone Company (Missouri PSC))
U-6949	Detroit Edison Company (Michigan PSC)
8400	East Kentucky Power Cooperative, Inc. (Kentucky PSC)
18328	Alabama Gas Corporation (Alabama PSC)
18416	Alabama Power Company (Alabama PSC)
820100-EU	Florida Power Corporation (Florida PSC)
8624	Kentucky Utilities (Kentucky PSC)
8648	East Kentucky Power Cooperative, Inc. (Kentucky PSC)
U-7236	Detroit Edison - Burlington Northern Refund (Michigan PSC)
U6633-R	Detroit Edison - MRCS Program (Michigan PSC)
U-6797-R	Consumers Power Company -MRCS Program (Michigan PSC)
U-5510-R	Consumers Power Company - Energy conservation Finance Program (Michigan PSC)
82-240E	South Carolina Electric & Gas Company (South Carolina PSC)
7350	Generic Working Capital Hearing (Michigan PSC)
RH-1-83	Westcoast Transmission Co., (National Energy Board of Canada)
820294-TP	Southern Bell Telephone & Telegraph Co. (Florida PSC)
82-165-EL-EFC (Subfile A)	Toledo Edison Company(Ohio PUC)
82-168-EL-EFC	Cleveland Electric Illuminating Company (Ohio PUC)
830012-EU	Tampa Electric Company (Florida PSC)
U-7065	The Detroit Edison Company - Fermi II (Michigan PSC)
8738	Columbia Gas of Kentucky, Inc. (Kentucky PSC)
ER-83-206	Arkansas Power & Light Company (Missouri PSC)
U-4758	The Detroit Edison Company – Refunds (Michigan PSC)
8836	Kentucky American Water Company (Kentucky PSC)
8839	Western Kentucky Gas Company (Kentucky PSC)
83-07-15	Connecticut Light & Power Co. (Connecticut DPU)
81-0485-WS	Palm Coast Utility Corporation (Florida PSC)
U-7650	Consumers Power Co. (Michigan PSC)
83-662	Continental Telephone Company of California, (Nevada PSC)
U-6488-R	Detroit Edison Co., FAC & PIPAC Reconciliation (Michigan PSC)
U-15684	Louisiana Power & Light Company (Louisiana PSC)
7395 & U-7397	Campaign Ballot Proposals (Michigan PSC)
820013-WS	Seacoast Utilities (Florida PSC)
U-7660	Detroit Edison Company (Michigan PSC)
83-1039	CP National Corporation (Nevada PSC)
U-7802	Michigan Gas Utilities Company (Michigan PSC)
83-1226	Sierra Pacific Power Company (Nevada PSC)
830465-EI	Florida Power & Light Company (Florida PSC)
U-7777	Michigan Consolidated Gas Company (Michigan PSC)
U-7779	Consumers Power Company (Michigan PSC)

U-7480-R	Michigan Consolidated Gas Company (Michigan PSC)
U-7488-R	Consumers Power Company – Gas (Michigan PSC)
U-7484-R	Michigan Gas Utilities Company (Michigan PSC)
U-7550-R	Detroit Edison Company (Michigan PSC)
U-7477-R	Indiana & Michigan Electric Company (Michigan PSC)
18978	Continental Telephone Co. of the South Alabama (Alabama PSC)
R-842583	Duquesne Light Company (Pennsylvania PUC)
R-842740	Pennsylvania Power Company (Pennsylvania PUC)
850050-EI	Tampa Electric Company (Florida PSC)
16091	Louisiana Power & Light Company (Louisiana PSC)
19297	Continental Telephone Co. of the South Alabama (Alabama PSC)
76-18788AA &76-18793AA	Detroit Edison - Refund - Appeal of U-4807 (Ingham County, Michigan Circuit Court)
85-53476AA & 85-534785AA	Detroit Edison Refund - Appeal of U-4758 (Ingham County, Michigan Circuit Court)
U-8091/U-8239	Consumers Power Company - Gas Refunds (Michigan PSC)
TR-85-179	United Telephone Company of Missouri (Missouri PSC)
85-212	Central Maine Power Company (Maine PSC)
ER-85646001 & ER-85647001	New England Power Company (FERC)
850782-EI & 850783-EI	Florida Power & Light Company (Florida PSC)
R-860378	Duquesne Light Company (Pennsylvania PUC)
R-850267	Pennsylvania Power Company (Pennsylvania PUC)
851007-WU & 840419-SU	Florida Cities Water Company (Florida PSC)
G-002/GR-86-160	Northern States Power Company (Minnesota PSC)
7195 (Interim)	Gulf States Utilities Company (Texas PUC)
87-01-03	Connecticut Natural Gas Company (Connecticut PUC))
87-01-02	Southern New England Telephone Company (Connecticut Department of Public Utility Control)
3673-	Georgia Power Company (Georgia PSC)
29484	Long Island Lighting Co. (New York Dept. of Public Service)
U-8924	Consumers Power Company – Gas (Michigan PSC)
Docket No. 1	Austin Electric Utility (City of Austin, Texas)
Docket E-2, Sub 527	Carolina Power & Light Company (North Carolina PUC)
870853	Pennsylvania Gas and Water Company (Pennsylvania PUC)
880069	Southern Bell Telephone Company (Florida PSC)
U-1954-88-102 T E-1032-88-102	Citizens Utilities Rural Company, Inc. & Citizens Utilities Company, Kingman Telephone Division (Arizona CC)
89-0033	Illinois Bell Telephone Company (Illinois CC)
U-89-2688-T	Puget Sound Power & Light Company (Washington UTC))
R-891364	Philadelphia Electric Company (Pennsylvania PUC)
F.C. 889	Potomac Electric Power Company (District of Columbia PSC)
Case No. 88/546	Niagara Mohawk Power Corporation, et al Plaintiffs, v. Gulf+Western, Inc. et al, defendants (Supreme Court County of Onondaga, State of New York)
87-11628	Duquesne Light Company, et al, plaintiffs, against Gulf+ Western, Inc. et al, defendants (Court of the Common Pleas of Allegheny County, Pennsylvania Civil Division)
890319-EI	Florida Power & Light Company (Florida PSC)
891345-EI	Gulf Power Company (Florida PSC)
ER 8811 0912J	Jersey Central Power & Light Company (BPU)
6531	Hawaiian Electric Company (Hawaii PUCs)

R0901595	Equitable Gas Company (Pennsylvania Consumer Counsel)
90-10	Artesian Water Company (Delaware PSC)
89-12-05	Southern New England Telephone Company (Connecticut PUC)
900329-WS	Southern States Utilities, Inc. (Florida PSC)
90-12-018	Southern California Edison Company (California PUC)
90-E-1185	Long Island Lighting Company (New York DPS)
R-911966	Pennsylvania Gas & Water Company (Pennsylvania PUC)
I.90-07-037, Phase II	(Investigation of OPEBs) Department of the Navy and all Other Federal Executive Agencies (California PUC)
U-1551-90-322	Southwest Gas Corporation (Arizona CC)
U-1656-91-134	Sun City Water Company (Arizona RUCO)
U-2013-91-133	Havasu Water Company (Arizona RUCO)
91-174	Central Maine Power Company (Department of the Navy and all Other Federal Executive Agencies)
U-1551-89-102 & U-1551-89-103	Southwest Gas Corporation - Rebuttal and PGA Audit (Arizona Corporation Commission)
Docket No. 6998	Hawaiian Electric Company (Hawaii PUC)
TC-91-040A and TC-91-040B	Intrastate Access Charge Methodology, Pool and Rates Local Exchange Carriers Association and South Dakota Independent Telephone Coalition
9911030-WS & 911-67-WS	General Development Utilities - Port Malabar and West Coast Divisions (Florida PSC)
922180	The Peoples Natural Gas Company (Pennsylvania PUC)
7233 and 7243	Hawaiian Nonpension Postretirement Benefits (Hawaiian PUC)
R-00922314 & M-920313C006	Metropolitan Edison Company (Pennsylvania PUC)
R00922428	Pennsylvania American Water Company (Pennsylvania PUC)
E-1032-92-083 & U-1656-92-183	Citizens Utilities Company, Agua Fria Water Division (Arizona Corporation Commission)
92-09-19	Southern New England Telephone Company (Connecticut PUC)
E-1032-92-073	Citizens Utilities Company (Electric Division), (Arizona CC)
UE-92-1262	Puget Sound Power and Light Company (Washington UTC))
92-345	Central Maine Power Company (Maine PUC)
R-932667	Pennsylvania Gas & Water Company (Pennsylvania PUC)
U-93-60	Matanuska Telephone Association, Inc. (Alaska PUC)
U-93-50	Anchorage Telephone Utility (Alaska PUC)
U-93-64	PTI Communications (Alaska PUC)
7700	Hawaiian Electric Company, Inc. (Hawaii PUC)
E-1032-93-111 & U-1032-93-193	Citizens Utilities Company - Gas Division (Arizona Corporation Commission)
R-00932670	Pennsylvania American Water Company (Pennsylvania PUC)
U-1514-93-169/ E-1032-93-169	Sale of Assets CC&N from Contel of the West, Inc. to Citizens Utilities Company (Arizona Corporation Commission)
7766	Hawaiian Electric Company, Inc. (Hawaii PUC)
93-2006- GA-AIR	The East Ohio Gas Company (Ohio PUC)
94-E-0334	Consolidated Edison Company (New York DPS)
94-0270	Inter-State Water Company (Illinois Commerce Commission)
94-0097	Citizens Utilities Company, Kauai Electric Division (Hawaii PUC)
PU-314-94-688	Application for Transfer of Local Exchanges (North Dakota PSC)
94-12-005-Phase I	Pacific Gas & Electric Company (California PUC)
R-953297	UGI Utilities, Inc. - Gas Division (Pennsylvania PUC)
95-03-01	Southern New England Telephone Company (Connecticut PUC)
95-0342	Consumer Illinois Water, Kankakee Water District (Illinois CC)
94-996-EL-AIR	Ohio Power Company (Ohio PUC)
95-1000-E	South Carolina Electric & Gas Company (South Carolina PSC)

Non-Docketed Staff Investigation	Citizens Utility Company - Arizona Telephone Operations (Arizona Corporation Commission)
E-1032-95-473	Citizens Utility Co. - Northern Arizona Gas Division (Arizona CC)
E-1032-95-433	Citizens Utility Co. - Arizona Electric Division (Arizona CC)
	Collaborative Ratemaking Process Columbia Gas of Pennsylvania (Pennsylvania PUC)
GR-96-285	Missouri Gas Energy (Missouri PSC)
94-10-45	Southern New England Telephone Company (Connecticut PUC)
A.96-08-001 et al.	California Utilities' Applications to Identify Sunk Costs of Non-Nuclear Generation Assets, & Transition Costs for Electric Utility Restructuring, & Consolidated Proceedings (California PUC)
96-324	Bell Atlantic - Delaware, Inc. (Delaware PSC)
96-08-070, et al.	Pacific Gas & Electric Co., Southern California Edison Co. and San Diego Gas & Electric Company (California PUC)
97-05-12	Connecticut Light & Power (Connecticut PUC)
R-00973953	Application of PECO Energy Company for Approval of its Restructuring Plan Under Section 2806 of the Public Utility Code (Pennsylvania PUC)
97-65	Application of Delmarva Power &Light Co. for Application of a Cost Accounting Manual and a Code of Conduct (Delaware PSC)
16705	Entergy Gulf States, Inc. (Cities Steering Committee)
E-1072-97-067	Southwestern Telephone Co. (Arizona Corporation Commission)
Non-Docketed Staff Investigation	Delaware - Estimate Impact of Universal Services Issues (Delaware PSC)
PU-314-97-12	US West Communications, Inc. Cost Studies (North Dakota PSC)
97-0351	Consumer Illinois Water Company (Illinois CC)
97-8001	Investigation of Issues to be Considered as a Result of Restructuring of Electric Industry (Nevada PSC)
U-0000-94-165	Generic Docket to Consider Competition in the Provision of Retail Electric Service (Arizona Corporation Commission)
98-05-006-Phase I	San Diego Gas & Electric Co., Section 386 costs (California PUC)
9355-U	Georgia Power Company Rate Case (Georgia PUC)
97-12-020 - Phase I	Pacific Gas & Electric Company (California PUC)
U-98-56, U-98-60, U-98-65, U-98-67	Investigation of 1998 Intrastate Access charge filings (Alaska PUC)
(U-99-66, U-99-65, U-99-56, U-99-52)	Investigation of 1999 Intrastate Access Charge filing (Alaska PUC)
Phase II of 97-SCCC-149-GIT	Southwestern Bell Telephone Company Cost Studies (Kansas CC)
PU-314-97-465	US West Universal Service Cost Model (North Dakota PSC)
Non-docketed Assistance	Bell Atlantic - Delaware, Inc., Review of New Telecomm. and Tariff Filings (Delaware PSC)
Contract Dispute	City of Zeeland, MI - Water Contract with the City of Holland, MI (Before an arbitration panel)
Non-docketed Project	City of Danville, IL - Valuation of Water System (Danville, IL)
Non-docketed Project	Village of University Park, IL - Valuation of Water and Sewer System (Village of University Park, Illinois)

E-1032-95-417	Citizens Utility Co., Maricopa Water/Wastewater Companies et al. (Arizona Corporation Commission)
T-1051B-99-0497	Proposed Merger of the Parent Corporation of Qwest Communications Corporation, LCI International Telecom Corp., and US West Communications, Inc. (Arizona CC)
T-01051B-99-0105	US West Communications, Inc. Rate Case (Arizona CC)
A00-07-043	Pacific Gas & Electric - 2001 Attrition (California PUC)
T-01051B-99-0499	US West/Quest Broadband Asset Transfer (Arizona CC)
99-419/420	US West, Inc. Toll and Access Rebalancing (North Dakota PSC)
PU314-99-119	US West, Inc. Residential Rate Increase and Cost Study Review (North Dakota PSC
98-0252	Ameritech - Illinois, Review of Alternative Regulation Plan (Illinois CUB)
00-108	Delmarva Billing System Investigation (Delaware PSC)
U-00-28	Matanuska Telephone Association (Alaska PUC)
Non-Docketed	Management Audit and Market Power Mitigation Analysis of the Merged Gas System Operation of Pacific Enterprises and Enova Corporation (California PUC)
00-11-038	Southern California Edison (California PUC)
00-11-056	Pacific Gas & Electric (California PUC)
00-10-028	The Utility Reform Network for Modification of Resolution E-3527 (California PUC)
98-479	Delmarva Power & Light Application for Approval of its Electric and Fuel Adjustments Costs (Delaware PSC)
99-457	Delaware Electric Cooperative Restructuring Filing (Delaware PSC)
99-582	Delmarva Power & Light dba Conectiv Power Delivery Analysis of Code of Conduct and Cost Accounting Manual (Delaware PSC)
99-03-04	United Illuminating Company Recovery of Stranded Costs (Connecticut OCC)
99-03-36	Connecticut Light & Power (Connecticut OCC)
Civil Action No. 98-1117	West Penn Power Company vs. PA PUC (Pennsylvania PSC)
Case No. 12604	Upper Peninsula Power Company (Michigan AG)
Case No. 12613	Wisconsin Public Service Commission (Michigan AG)
41651	Northern Indiana Public Service Co Overearnings investigation (Indiana UCC)
13605-U	Savannah Electric & Power Company – FCR (Georgia PSC)
14000-U	Georgia Power Company Rate Case/M&S Review (Georgia PSC)
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Non-Docketed	Georgia Power Company & Savannah Electric & Power FPR Company Fuel Procurement Audit (Georgia PSC)
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99-02-05	Connecticut Light & Power (Connecticut OCC)
01-05-19-RE03	Yankee Gas Service Application for a Rate Increase, Phase I-2002-IERM (Connecticut OCC)
G-01551A-00-0309	Southwest Gas Corporation, Application to amend its rate Schedules (Arizona CC)
00-07-043	Pacific Gas & Electric Company Attrition & Application for a rate increase (California PUC)

97-12-020 Phase II	Pacific Gas & Electric Company Rate Case (California PUC)
01-10-10	United Illuminating Company (Connecticut OCC)
13711-U	Georgia Power FCR (Georgia PSC)
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02-BLVT-377-AUD	Blue Valley Telephone Company Audit/General Rate Investigation (Kansas CC)
02-S&TT-390-AUD	S&T Telephone Cooperative Audit/General Rate Investigation (Kansas CC)
01-SFLT-879-AUD	Sunflower Telephone Company Inc., Audit/General Rate Investigation (Kansas CC)
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P404, 407, 520, 413 426, 427, 430, 421/ CI-00-712	Sherburne County Rural Telephone Company, dba as Connections, Etc. (Minnesota DOC)
U-01-85	ACS of Alaska, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
U-01-34	ACS of Anchorage, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
U-01-83	ACS of Fairbanks, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
U-01-87	ACS of the Northland, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
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Docket 6914	Shoreham Telephone Company, Inc. (Vermont BPU)
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A-122250F5000	Equitable Resources, Inc. and The Peoples Natural Gas Company, d/b/a Dominion Peoples (Pennsylvania PUC)
E-01345A-05-0816	Arizona Public Service Company (Arizona CC)
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A-2008-2063737	Babcock & Brown Infrastructure Fund North America, LP. and The Peoples Natural Gas Company, d/b/a Dominion Peoples (Pennsylvania PUC)
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2020.05.055	Montana-Dakota Utilities Co. (Montana PSC)
2020.05.066	NorthWestern Energy (Montana PSC)
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A-2021-3024267	Aqua Pennsylvania Wastewater Inc. (Pennsylvania PUC)

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Revenue Requirement Summary Schedules
Accompanying the Direct Testimony of Ralph Smith

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Aqua Pennsylvania, Inc.
Calculation of Revenue Deficiency (Sufficiency)
Per Aqua

Exhibit LA-1
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386

Fully Projected Future Test Year Ending March 31, 2023

Line No.	Description	Reference	Total Company (A)	Water (B)	Wastewater Base Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Adjusted rate base	B	$ 4,182,606,575	$ 3,818,296,012	$ 198,372,990	$ 57,746,861	$ 5,377,205	$ 47,259,177	$ 25,308,104	$ 30,246,226
2	Rate of return	D		7.64%	7.64%	7.64%	7.64%	7.64%	7.64%	7.64%
3	Net operating income required		$ 319,547,790	$ 291,714,756	$ 15,155,537	$ 4,411,814	$ 410,814	$ 3,610,563	$ 1,933,519	$ 2,310,787
4	Adjusted net operating income	C	$ 251,040,960	$ 245,829,185	$ 3,339,899	$ 260,353	$ (159,419)	$ 1,476,344	$ (95,875)	$ 390,474
5	Net operating income deficiency		$ 68,506,830	$ 45,885,571	$ 11,815,639	$ 4,151,461	$ 570,233	$ 2,134,219	$ 2,029,394	$ 1,920,313
6	Gross revenue conversion factor	A-1		1.422652	1.432530	1.432530	1.432530	1.432530	1.432530	1.432530
7	Revenue deficiency (Sufficiency)		$ 97,684,827	$ 65,279,187	$ 16,926,261	$ 5,947,094	$ 816,876	$ 3,057,334	$ 2,907,169	$ 2,750,907
8	Operating Revenue at Current Rates	C	$ 546,806,058	$ 509,746,949	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,871,698
9	Percentage Increase	L7 / L8	17.9%	12.8%	89.0%	149.5%	80.5%	42.1%	99.4%	95.8%

Notes and Source
Exhibits 1-A through 1-G, Schedule A-3

Act 11: Per Exhibit 1-A, Act 11

10	Present Rate Revenue		$ 546,806,058	$ 509,746,949	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,871,698
11	Additional Revenue Requirement		$ 97,684,827	$ 65,279,187	$ 16,926,261	$ 5,947,094	$ 816,876	$ 3,057,334	$ 2,907,169	$ 2,750,907
12	Act 11 Allocation		$ -	$ 20,839,424	$ (13,451,997)	$ (2,977,700)	$ (457,861)	$ (515,804)	$ (1,749,281)	$ (1,686,782)
13	Proposed Revenues		$ 644,490,885	$ 595,865,561	$ 22,486,025	$ 6,947,967	$ 1,373,584	$ 9,800,270	$ 4,081,655	$ 3,935,824
14	Rate Increase/(Decrease) - $		$ 97,684,827	$ 86,118,612	$ 3,474,263	$ 2,969,394	$ 359,014	$ 2,541,530	$ 1,157,888	$ 1,064,125
15	Rate Increase/(Decrease) - %		17.86%	16.89%	18.27%	74.63%	35.39%	35.01%	39.60%	37.06%
16	Shift				37.43%	30.00%	25.00%	5.00%	30.00%	30.00%

Aqua Pennsylvania, Inc.
Calculation of Revenue Deficiency (Sufficiency)
Per OCA

Fully Projected Future Test Year Ending March 31, 2023

Line No.	Description	Reference	Total Company (A)	Water (B)	Wastewater Base Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Adjusted rate base	B	$ 4,170,086,351	$ 3,808,831,116	$ 195,350,662	$ 57,735,861	$ 5,376,205	$ 47,252,177	$ 25,303,104	$ 30,237,226
2	Rate of return	D		6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
3	Net operating income required		$ 250,205,182	$ 228,529,867	$ 11,721,040	$ 3,464,152	$ 322,572	$ 2,835,131	$ 1,518,186	$ 1,814,234
4	Adjusted net operating income	C	$ 259,775,894	$ 254,083,032	$ 3,703,110	$ 303,033	$ (152,130)	$ 1,503,939	$ (78,264)	$ 413,175
5	Net operating income deficiency		$ (9,570,713)	$ (25,553,165)	$ 8,017,929	$ 3,161,119	$ 474,702	$ 1,331,192	$ 1,596,450	$ 1,401,059
6	Gross revenue conversion factor	A-1		1.422652	1.432530	1.432530	1.432530	1.432530	1.432530	1.432530
7	Revenue deficiency (Sufficiency)		$ (13,457,907)	$ (36,353,254)	$ 11,485,927	$ 4,528,399	$ 680,025	$ 1,906,973	$ 2,286,963	$ 2,007,059
8	Operating Revenue at Current Rates	C	$ 549,864,587	$ 512,805,479	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,871,698
9	Percentage Increase	L7 / L8	-2.4%	-7.1%	60.4%	113.8%	67.0%	26.3%	78.2%	69.9%

Notes and Source
See referenced schedules

Act 11: Per Exhibit 1-A, Act 11

10	Present Rate Revenue		$ 549,864,587	$ 512,805,479	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,871,698
11	Additional Revenue Requirement		$ (13,457,907)	$ (36,353,254)	$ 11,485,927	$ 4,528,399	$ 680,025	$ 1,906,973	$ 2,286,963	$ 2,007,059
12	Proposed Revenues before Act 11 Allocation	Note [A]	$ 536,406,680	$ 476,452,224	$ 30,497,688	$ 8,506,973	$ 1,694,594	$ 9,165,713	$ 5,210,729	
13	Rate Increase/(Decrease) - $		$ (13,457,907)	$ (36,353,254)	$ 11,485,927	$ 4,528,399	$ 680,025	$ 1,906,973	$ 2,286,963	$ 2,007,059
14	Rate Increase/(Decrease) - %		-2.45%	-7.09%	60.41%	113.82%	67.03%	26.27%	78.22%	69.89%

Note [A]: See the testimony of OCA Witness Glenn Watkins for OCA's recommended Act 11 allocation

Aqua Pennsylvania, Inc.
Calculation of Revenue Deficiency (Sufficiency)
OCA Adjusted vs. Aqua Application

Fully Projected Future Test Year Ending March 31, 2023

Line No.	Description	Reference	Total Company (A)	Water (B)	Wastewater Base Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Adjusted rate base	B	$ (12,520,224)	$ (9,464,896)	$ (3,022,328)	$ (11,000)	$ (1,000)	$ (7,000)	$ (5,000)	$ (9,000)
2	Rate of return	D								
3	Net operating income required		$ (69,342,609)	$ (63,184,889)	$ (3,434,498)	$ (947,662)	$ (88,242)	$ (775,432)	$ (415,333)	$ (496,553)
4	Adjusted net operating income	C	$ 8,734,934	$ 8,253,847	$ 363,212	$ 42,680	$ 7,289	$ 27,595	$ 17,611	$ 22,701
5	Net operating income deficiency		$ (78,077,543)	$ (71,438,736)	$ (3,797,709)	$ (990,342)	$ (95,531)	$ (803,027)	$ (432,944)	$ (519,254)
6	Gross revenue conversion factor	A-1								
7	Revenue deficiency (Sufficiency)		$ (111,142,734)	$ (101,632,442)	$ (5,440,334)	$ (1,418,694)	$ (136,850)	$ (1,150,361)	$ (620,206)	$ (743,848)

Notes and Source
Page 2 minus Page 1 Amounts

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Water Operations

Line No.	Description	Schedule Reference	Component	OCA Adjustments	OCA Multiplier	OCA Revenue Requirement Amount
				(A)	(B)	(C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.422652	
1	Rate Base per Aqua's Filing	B		$ 3,818,296,012	-2.333%	$ (89,082,177)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.422652	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ (2,315,440)	8.54%	$ (197,644)
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ (6,431,456)	8.54%	$ (548,983)
4	Cash Working Capital	B-3		$ (718,000)	8.54%	$ (61,288)
5	Total OCA Rate Base Adjustments			$ (9,464,896)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 3,808,831,116		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ 121,865	$ 86,656	1.422652	$ (123,281)
8	Special Contract Revenue	C-2	$ 301,307	$ 214,253	1.422652	$ (304,808)
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ 2,313,955	1.422652	$ (3,291,952)
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 1,677,195	1.422652	$ (2,386,064)
11	General Inflation	C-5	$ 864,335	$ 614,610	1.422652	$ (874,377)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ 2,757,223	$ 1,960,603	1.422652	$ (2,789,255)
13	Purchased Power Expense	C-7	$ (96,312)	$ (68,486)	1.422652	$ 97,431
14	Chemicals Expense	C-8	$ (66,787)	$ (47,491)	1.422652	$ 67,563
15	Universal Service Program Expense	C-9	$ -	$ -	1.422652	$ -
16	Advertising Expense	C-10	$ 50,000	$ 35,554	1.422652	$ (50,581)
17	Payroll Expense	C-11	$ 267,031	$ 189,880	1.422652	$ (270,133)
18	Stock-Based Compensation	C-12	$ 780,493	$ 554,992	1.422652	$ (789,561)
19	Payroll Tax Expense	C-13	$ 93,467	$ 66,462	1.422652	$ (94,553)
20	Employee Group Insurance	C-14	$ 23,285	$ 16,558	1.422652	$ (23,556)
21	Insurance Expense	C-15	$ 71,428	$ 50,791	1.422652	$ (72,258)
22	Rate Case Expense	C-16	$ 106,762	$ 75,916	1.422652	$ (108,002)
23	Non-Rate Case Legal Expense	C-17	$ 24,981	$ 17,763	1.422652	$ (25,271)
24	Supplemental Executive Retirement Program (SERP)	C-18	$ 695,612	$ 494,635	1.422652	$ (703,693)
25	Total OCA Adjustments to Operating Income	C.1	$ 5,994,689	$ 8,253,847		
26	Net Operating Income per Company Filing	C		$ 245,829,185		
27	**OCA Adjusted Net Operating Income**	C		$ 254,083,032		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.422652	
29	Per Company	A-1			1.422652	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 45,885,571	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (101,632,443)
34	Company Requested Base Rate Revenues	A				$ 65,279,187
35	Reconciled Revenue Requirement					$ (36,353,256)
36	Revenue Requirement Calculated on Schedule A OCA	A				$ (36,353,254)
37	Difference from Above					$ (1)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Wastewater Base Operations

Exhibit LA-1
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 198,372,990	-2.349%	$ (4,660,248)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances f	B-2		$ (2,994,328)	8.60%	$ (257,368)
4	Cash Working Capital	B-3		$ (28,000)	8.60%	$ (2,407)
5	Total OCA Rate Base Adjustments			$ (3,022,328)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 195,350,662		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ 66,754	1.432530	$ (95,628)
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 72,513	1.432530	$ (103,877)
11	General Inflation	C-5	$ 145,368	$ 103,368	1.432530	$ (148,078)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ 5,000	$ 3,555	1.432530	$ (5,093)
17	Payroll Expense	C-11	$ 19,342	$ 13,754	1.432530	$ (19,703)
18	Stock-Based Compensation	C-12	$ 66,000	$ 46,931	1.432530	$ (67,230)
19	Payroll Tax Expense	C-13	$ 7,448	$ 5,296	1.432530	$ (7,587)
20	Employee Group Insurance	C-14	$ 4,113	$ 2,925	1.432530	$ (4,190)
21	Insurance Expense	C-15	$ 710	$ 505	1.432530	$ (723)
22	Rate Case Expense	C-16	$ 9,905	$ 7,043	1.432530	$ (10,090)
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ 57,050	$ 40,567	1.432530	$ (58,114)
25	Total OCA Adjustments to Operating Income	C.1	$ 314,936	$ 363,212		
26	Net Operating Income per Company Filing	C		$ 3,339,899		
27	**OCA Adjusted Net Operating Income**	C		$ 3,703,110		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 11,815,639	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (5,440,336)
34	Company Requested Base Rate Revenues	A				$ 16,926,261
35	Reconciled Revenue Requirement					$ 11,485,925
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 11,485,927
37	Difference from Above					$ (2)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Limerick Wastewater

Exhibit LA-1
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 57,746,861	-2.349%	$ (1,356,609)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances f	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (11,000)	8.60%	$ (945)
5	Total OCA Rate Base Adjustments			$ (11,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 57,735,861		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 26,129	1.432530	$ (37,431)
11	General Inflation	C-5	$ 23,275	$ 16,551	1.432530	$ (23,709)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 23,275	$ 42,680		
26	Net Operating Income per Company Filing	C		$ 260,353		
27	**OCA Adjusted Net Operating Income**	C		$ 303,033		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 4,151,461	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (1,418,694)
34	Company Requested Base Rate Revenues	A				$ 5,947,094
35	Reconciled Revenue Requirement					$ 4,528,400
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 4,528,399
37	Difference from Above					$ 0

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
East Bradford Wastewater

Exhibit LA-1
Schedule A
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Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 5,377,205	-2.349%	$ (126,323)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (1,000)	8.60%	$ (86)
5	Total OCA Rate Base Adjustments			$ (1,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 5,376,205		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 2,433	1.432530	$ (3,486)
11	General Inflation	C-5	$ 6,828	$ 4,855	1.432530	$ (6,955)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 6,828	$ 7,289		
26	Net Operating Income per Company Filing	C		$ (159,419)		
27	**OCA Adjusted Net Operating Income**	C		$ (152,130)		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 570,233	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (136,850)
34	Company Requested Base Rate Revenues	A				$ 816,876
35	Reconciled Revenue Requirement					$ 680,026
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 680,025
37	Difference from Above					$ 0

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Cheltenham Wastewater

Exhibit LA-1
Schedule A
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Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 47,259,177	-2.349%	$ (1,110,229)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (7,000)	8.60%	$ (602)
5	Total OCA Rate Base Adjustments			$ (7,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 47,252,177		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 21,395	1.432530	$ (30,649)
11	General Inflation	C-5	$ 8,719	$ 6,200	1.432530	$ (8,881)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 8,719	$ 27,595		
26	Net Operating Income per Company Filing	C		$ 1,476,344		
27	**OCA Adjusted Net Operating Income**	C		$ 1,503,939		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 2,134,219	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (1,150,361)
34	Company Requested Base Rate Revenues	A				$ 3,057,334
35	Reconciled Revenue Requirement					$ 1,906,973
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 1,906,973
37	Difference from Above					$ (0)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
East Norriton Wastewater

Exhibit LA-1
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 9 of 10

Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 25,308,104	-2.349%	$ (594,547)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (5,000)	8.60%	$ (430)
5	Total OCA Rate Base Adjustments			$ (5,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 25,303,104		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 11,450	1.432530	$ (16,403)
11	General Inflation	C-5	$ 8,665	$ 6,161	1.432530	$ (8,826)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 8,665	$ 17,611		
26	Net Operating Income per Company Filing	C		$ (95,875)		
27	**OCA Adjusted Net Operating Income**	C		$ (78,264)		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 2,029,394	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (620,206)
34	Company Requested Base Rate Revenues	A				$ 2,907,169
35	Reconciled Revenue Requirement					$ 2,286,963
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 2,286,963
37	Difference from Above					$ (0)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
New Garden Wastewater

Exhibit LA-1
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 10 of 10

Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 30,246,226	-2.349%	$ (710,555)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (9,000)	8.60%	$ (774)
5	Total OCA Rate Base Adjustments			$ (9,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 30,237,226		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 13,667	1.432530	$ (19,578)
11	General Inflation	C-5	$ 12,705	$ 9,034	1.432530	$ (12,942)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 12,705	$ 22,701		
26	Net Operating Income per Company Filing	C		$ 390,474		
27	**OCA Adjusted Net Operating Income**	C		$ 413,175		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 1,920,313	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (743,849)
34	Company Requested Base Rate Revenues	A				$ 2,750,907
35	Reconciled Revenue Requirement					$ 2,007,058
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 2,007,059
37	Difference from Above					$ (1)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 7

Line No.	Description	Company Proposed Amount (A)	Company Proposed Rates (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0051	0.512%	0.51%		0.51%
3	Taxable Income Before Assessments	$ 0.9949		99.49%		99.49%
4	PUC Assessments	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9885		98.85%		98.85%
6	State Income Taxes	$ 0.0988	9.990%	9.88%	9.990%	9.88%
7	Income Before Federal Income Taxes	$ 0.8898		88.98%		88.98%
8	Federal Income Taxes	$ 0.1869	21.000%	18.69%	21.000%	18.69%
9	Change in Net Operating Income	$ 0.7029		70.29%		70.29%
10	Gross Revenue Conversion Factor	1.42265		1.42265		1.42265

Notes and Source

Col. A: Aqua filing, Exhibit 1-A, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 45,885,571	70.29%	$ (25,553,165)	70.29127%
12	Uncollectibles	$ 334,387	0.51%	$ (186,217)	0.512242%
13	PUC Assessment	$ 415,302	0.64%	$ (231,277)	0.636194%
14	Current State Income Taxes	$ 6,446,497	9.88%	$ (3,589,982)	9.87527%
15	Current Federal Income Taxes	$ 12,197,430	18.69%	$ (6,792,613)	18.68502%
16	Total Revenue Increase	$ 65,279,187	100.00%	$ (36,353,254)	100.0000%
17	Total Revenue Increase (From Schedule A)			$ (36,353,254)	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Wastewater Base Operations
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-B, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 11,815,639	69.81%	$ 8,017,929	69.80655%
12	Uncollectibles	$ 202,084	1.19%	$ 137,132	1.193911%
13	PUC Assessment	$ 107,684	0.64%	$ 73,073	0.636194%
14	Current State Income Taxes	$ 1,659,988	9.81%	$ 1,126,445	9.80717%
15	Current Federal Income Taxes	$ 3,140,866	18.56%	$ 2,131,348	18.55617%
16	Total Revenue Increase	$ 16,926,261	100.00%	$ 11,485,927	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 11,485,927	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Limerick Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-C, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 4,151,461	69.81%	$ 3,161,119	69.80655%
12	Uncollectibles	$ 71,003	1.19%	$ 54,065	1.193911%
13	PUC Assessment	$ 37,835	0.64%	$ 28,809	0.636194%
14	Current State Income Taxes	583,242	9.81%	$ 444,108	9.80717%
15	Current Federal Income Taxes	$ 1,103,553	18.56%	$ 840,298	18.55617%
16	Total Revenue Increase	$ 5,947,094	100.00%	$ 4,528,399	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 4,528,399	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Bradford Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-D, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 570,233	69.81%	$ 474,702	69.80655%
12	Uncollectibles	$ 9,753	1.19%	$ 8,119	1.193911%
13	PUC Assessment	$ 5,197	0.64%	$ 4,326	0.636194%
14	Current State Income Taxes	$ 80,112	9.81%	$ 66,691	9.80717%
15	Current Federal Income Taxes	$ 151,581	18.56%	$ 126,187	18.55617%
16	Total Revenue Increase	$ 816,876	100.00%	$ 680,025	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 680,025	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Cheltenham Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-E, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 2,134,219	69.81%	$ 1,331,192	69.80655%
12	Uncollectibles	$ 36,502	1.19%	$ 22,768	1.193911%
13	PUC Assessment	$ 19,451	0.64%	$ 12,132	0.636194%
14	Current State Income Taxes	$ 299,838	9.81%	$ 187,020	9.80717%
15	Current Federal Income Taxes	$ 567,324	18.56%	$ 353,861	18.55617%
16	Total Revenue Increase	$ 3,057,334	100.00%	$ 1,906,973	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 1,906,973	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Norriton Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-F, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 2,029,394	69.81%	$ 1,596,450	69.80655%
12	Uncollectibles	$ 34,709	1.19%	$ 27,304	1.193911%
13	PUC Assessment	$ 18,495	0.64%	$ 14,550	0.636194%
14	Current State Income Taxes	$ 285,111	9.81%	$ 224,286	9.80717%
15	Current Federal Income Taxes	$ 539,459	18.56%	$ 424,373	18.55617%
16	Total Revenue Increase	$ 2,907,169	100.00%	$ 2,286,963	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 2,286,963	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
New Garden Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-G, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 1,920,314	69.81%	$ 1,401,059	69.80655%
12	Uncollectibles	$ 32,843	1.19%	$ 23,962	1.193911%
13	PUC Assessment	$ 17,501	0.64%	$ 12,769	0.636194%
14	Current State Income Taxes	$ 269,786	9.81%	$ 196,836	9.80717%
15	Current Federal Income Taxes	$ 510,463	18.56%	$ 372,433	18.55617%
16	Total Revenue Increase	$ 2,750,907	100.00%	$ 2,007,059	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 2,007,059	

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 5,562,077,614	$ -	$ 5,562,077,614
2	Utility Plant Acquisition Adjustment	$ 5,918,960	$ (2,315,440)	$ 3,603,521
3	Less: Accumulated Depreciation	$ (1,187,649,009)	$ -	$ (1,187,649,009)
4	Net Plant in Service	$ 4,380,347,565	$ (2,315,440)	$ 4,378,032,126
	Additions:			
5	Materials and Supplies	$ 7,672,303	$ -	$ 7,672,303
6	Cash Working Capital	$ 1,576,000	$ (718,000)	$ 858,000
7	Total Additions to Rate Base	$ 9,248,303	$ (718,000)	$ 8,530,303
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (178,784,735)	$ (6,431,456)	$ (185,216,191)
9	Deferred Income Taxes	$ (392,515,121)	$ -	$ (392,515,121)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (571,299,856)	$ (6,431,456)	$ (577,731,312)
12	Total Rate Base	$ 3,818,296,012	$ (9,464,896)	$ 3,808,831,116

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-A, Schedule G-1
Col.B: Schedule B.1, page 1
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Wastewater Base Operations
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 281,132,004	$ -	$ 281,132,004
2	Utility Plant Acquisition Adjustment	$ 1,335,224	$ -	$ 1,335,224
3	Less: Accumulated Depreciation	$ (55,041,320)	$ -	$ (55,041,320)
4	Net Plant in Service	$ 227,425,909	$ -	$ 227,425,909
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 554,000	$ (28,000)	$ 526,000
7	Total Additions to Rate Base	$ 554,000	$ (28,000)	$ 526,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (20,965,154)	$ (2,994,328)	$ (23,959,482)
9	Deferred Income Taxes	$ (8,641,765)	$ -	$ (8,641,765)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (29,606,919)	$ (2,994,328)	$ (32,601,247)
12	Total Rate Base	$ 198,372,990	$ (3,022,328)	$ 195,350,662

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-B, Schedule G-1
Col.B: Schedule B.1, page 2
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Limerick Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 97,837,038	$ -	$ 97,837,038
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (38,525,920)	$ -	$ (38,525,920)
4	Net Plant in Service	$ 59,311,118	$ -	$ 59,311,118
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 57,000	$ (11,000)	$ 46,000
7	Total Additions to Rate Base	$ 57,000	$ (11,000)	$ 46,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (1,491,647)	$ -	$ (1,491,647)
9	Deferred Income Taxes	$ (129,610)	$ -	$ (129,610)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (1,621,257)	$ -	$ (1,621,257)
12	Total Rate Base	$ 57,746,861	$ (11,000)	$ 57,735,861

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-C, Schedule G-1
Col.B: Schedule B.1, page 3
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Bradford Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 8,469,967	$ -	$ 8,469,967
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (3,131,596)	$ -	$ (3,131,596)
4	Net Plant in Service	$ 5,338,371	$ -	$ 5,338,371
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 62,000	$ (1,000)	$ 61,000
7	Total Additions to Rate Base	$ 62,000	$ (1,000)	$ 61,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	$ -	$ -
9	Deferred Income Taxes	$ (23,166)	$ -	$ (23,166)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (23,166)	$ -	$ (23,166)
12	Total Rate Base	$ 5,377,205	$ (1,000)	$ 5,376,205

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-D, Schedule G-1
Col.B: Schedule B.1, page 4
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Cheltenham Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 63,415,602	$ -	$ 63,415,602
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (15,667,733)	$ -	$ (15,667,733)
4	Net Plant in Service	$ 47,747,869	$ -	$ 47,747,869
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 376,000	$ (7,000)	$ 369,000
7	Total Additions to Rate Base	$ 376,000	$ (7,000)	$ 369,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (505,060)	$ -	$ (505,060)
9	Deferred Income Taxes	$ (359,633)	$ -	$ (359,633)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (864,692)	$ -	$ (864,692)
12	Total Rate Base	$ 47,259,177	$ (7,000)	$ 47,252,177

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-E, Schedule G-1
Col.B: Schedule B.1, page 5
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Norriton Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 55,678,832	$ -	$ 55,678,832
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (30,454,610)	$ -	$ (30,454,610)
4	Net Plant in Service	$ 25,224,223	$ -	$ 25,224,223
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 80,000	$ (5,000)	$ 75,000
7	Total Additions to Rate Base	$ 80,000	$ (5,000)	$ 75,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	$ -	$ -
9	Deferred Income Taxes	$ 3,881	$ -	$ 3,881
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ 3,881	$ -	$ 3,881
12	Total Rate Base	$ 25,308,104	$ (5,000)	$ 25,303,104

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-F, Schedule G-1
Col.B: Schedule B.1, page 6
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
New Garden Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 60,289,702	$ -	$ 60,289,702
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (29,746,456)	$ -	$ (29,746,456)
4	Net Plant in Service	$ 30,543,245	$ -	$ 30,543,245
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ (91,000)	$ (9,000)	$ (100,000)
7	Total Additions to Rate Base	$ (91,000)	$ (9,000)	$ (100,000)
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	$ -	$ -
9	Deferred Income Taxes	$ (206,019)	$ -	$ (206,019)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (206,019)	$ -	$ (206,019)
12	Total Rate Base	$ 30,246,226	$ (9,000)	$ 30,237,226

Notes and Source

Col.A & D: PAWC Company Filing, Exhibit 3-A, page 22
Col.B: Schedule B.1.B, page 1
Col.C: Col.A + Col.B
Col.D: Schedule B.1.B, page 2
Col.E: Col.D + Col.E

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Utility Plant Acquisition Adjustments - Phoenixville Water	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	Cash Working Capital
			B-1	B-2	B-3
1	Utility Plant in Service	$ -			
2	Utility Plant Acquisition Adjustment	$ (2,315,440)	$ (2,315,440)		
3	Less: Accumulated Depreciation	$ -			
4	Net Plant in Service	$ (2,315,440)	$ (2,315,440)	$ -	$ -
	Additions				
5	Materials and Supplies	$ -			
6	Cash Working Capital	$ (718,000)			$ (718,000)
7	Total Additions to Rate Base	$ (718,000)	$ -	$ -	$ (718,000)
	Deductions:				
8	Contributions in Aid of Construction and Customer Advances for Construction	$ (6,431,456)		$ (6,431,456)	
9	Deferred Income Taxes	$ -			
10	Investment Tax Credit	$ -			
11	Total Rate Base Deductions	$ (6,431,456)	$ -	$ (6,431,456)	$ -
12	Total Rate Base	$ (9,464,896)	$ (2,315,440)	$ (6,431,456)	$ (718,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Wastewater Base Operations
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	Cash Working Capital
			B-2	B-3
1	Utility Plant in Service	$ -		
2	Utility Plant Acquisition Adjustment	$ -		
3	Less: Accumulated Depreciation	$ -		
4	Net Plant in Service	$ -	$ -	$ -
	Additions			
5	Materials and Supplies	$ -		
6	Cash Working Capital	$ (28,000)		$ (28,000)
7	Total Additions to Rate Base	$ (28,000)	$ -	$ (28,000)
	Deductions:			
8	Contributions in Aid of Construction and Customer Advances for Construction	$ (2,994,328)	$ (2,994,328)	
9	Deferred Income Taxes	$ -		
10	Investment Tax Credit	$ -		
11	Total Rate Base Deductions	$ (2,994,328)	$ (2,994,328)	$ -
12	Total Rate Base	$ (3,022,328)	$ (2,994,328)	$ (28,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Limerick Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (11,000)	$ (11,000)
7	Total Additions to Rate Base	$ (11,000)	$ (11,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (11,000)	$ (11,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Bradford Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 7

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (1,000)	$ (1,000)
7	Total Additions to Rate Base	$ (1,000)	$ (1,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (1,000)	$ (1,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Cheltenham Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (7,000)	$ (7,000)
7	Total Additions to Rate Base	$ (7,000)	$ (7,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (7,000)	$ (7,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Norriton Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (5,000)	$ (5,000)
7	Total Additions to Rate Base	$ (5,000)	$ (5,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (5,000)	$ (5,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
New Garden Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (9,000)	$ (9,000)
7	Total Additions to Rate Base	$ (9,000)	$ (9,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (9,000)	$ (9,000)

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 509,746,949	$ 3,058,530	$ 512,805,479
2	Operating Expenses	$ 116,492,928	$ (2,720,827)	$ 113,772,101
3	Depreciation	$ 122,166,578	$ (121,865)	$ 122,044,713
	Taxes Other Than Income:			
4	PUC Assessment	$ 2,305,969	$ -	$ 2,305,969
5	OCA & SBA Assessments	$ 937,010	$ -	$ 937,010
6	Public Utility Realty Tax	$ 4,800,000	$ -	$ 4,800,000
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ 1,073,227	$ -	$ 1,073,227
9	Federal & State Payroll Tax	$ 3,163,655	$ (93,467)	$ 3,070,188
10	Total Taxes, Other Than Income	$ 12,279,861	$ (93,467)	$ 12,186,394
11	Utility Operating Income Before Income Taxes	$ 258,807,582	$ 5,994,689	$ 264,802,271
	Income Taxes:			
12	Federal Tax - Current	$ 13,072,876	$ (1,478,010)	$ 11,594,866
13	Pa. CNI Tax - Current	$ 5,767,840	$ (781,147)	$ 4,986,693
14	Federal Tax - Deferred	$ (5,171,324)	$ -	$ (5,171,324)
15	Pa. CNI Tax - Deferred	$ (437,582)	$ -	$ (437,582)
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ (253,413)	$ -	$ (253,413)
18	Total Income Taxes	$ 12,978,397	$ (2,259,158)	$ 10,719,239
19	Utility Operating Income	**$ 245,829,185**	**$ 8,253,847**	**$ 254,083,032**
20	Rate Base	$ 3,818,296,012	$ (9,464,896)	$ 3,808,831,116
21	Earned Rate of Return	6.44%		6.67%

Notes and Source

Col.A: Aqua filing, Exhibit 1-A, Schedule A-1
Col.B: Schedule C.1 P1-2
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Wastewater Base Operations
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 19,011,761	$ -	$ 19,011,761
2	Operating Expenses	$ 9,874,361	$ (307,488)	$ 9,566,873
3	Depreciation Expense	$ 7,780,016	$ -	$ 7,780,016
	Taxes Other Than Income:			
4	PUC Assessment	$ 86,005	$ -	$ 86,005
5	OCA & SBA Assessments	$ 34,947	$ -	$ 34,947
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ 175,853	$ -	$ 175,853
9	Federal & State Payroll Tax	$ -	$ (7,448)	$ (7,448)
10	Total Taxes, Other Than Income	$ 17,951,182	$ (314,936)	$ 17,636,246
11	Utility Operating Income Before Income Taxes	$ 1,060,579	$ 314,936	$ 1,375,515
	Income Taxes:			
12	Federal Tax - Current	$ (2,233,149)	$ (31,584)	$ (2,264,733)
13	Pa. CNI Tax - Current	$ (1,182,491)	$ (16,692)	$ (1,199,183)
14	Federal Tax - Deferred	$ 1,139,605	$ -	$ 1,139,605
15	Pa. CNI Tax - Deferred	$ (3,285)	$ -	$ (3,285)
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (2,279,319)	$ (48,276)	$ (2,327,595)
19	Utility Operating Income	**$ 3,339,899**	**$ 363,212**	**$ 3,703,110**
20	Rate Base	$ 198,372,990	$ (3,022,328)	$ 195,350,662
21	Earned Rate of Return	1.68%		1.90%

Notes and Source

Col.A: Aqua filing, Exhibit 1-B, Schedule A-1
Col.B: Schedule C.1 P3
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Limerick Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 3,978,573	$ -	$ 3,978,573
2	Operating Expenses	$ 2,055,513	$ (23,275)	$ 2,032,238
3	Depreciation Expense	$ 1,998,881	$ -	$ 1,998,881
	Taxes Other Than Income:			
4	PUC Assessment	$ 17,998	$ -	$ 17,998
5	OCA & SBA Assessments	$ 7,313	$ -	$ 7,313
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 4,079,706	$ (23,275)	$ 4,056,430
11	Utility Operating Income Before Income Taxes	$ (101,133)	$ 23,275	$ (77,857)
	Income Taxes:			
12	Federal Tax - Current	$ (279,621)	$ (12,695)	$ (292,316)
13	Pa. CNI Tax - Current	$ (147,783)	$ (6,709)	$ (154,493)
14	Federal Tax - Deferred	$ 65,919	$ -	$ 65,919
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (361,485)	$ (19,404)	$ (380,890)
19	Utility Operating Income	**$ 260,353**	**$ 42,680**	**$ 303,033**
20	Rate Base	$ 57,746,861	$ (11,000)	$ 57,735,861
21	Earned Rate of Return	0.45%		0.52%

Notes and Source

Col.A: Aqua filing, Exhibit 1-C, Schedule A-1
Col.B: Schedule C.1 P4
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Bradford Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 1,014,569	$ -	$ 1,014,569
2	Operating Expenses	$ 1,115,524	$ (6,828)	$ 1,108,696
3	Depreciation Expense	$ 158,552	$ -	$ 158,552
	Taxes Other Than Income:			
4	PUC Assessment	$ 4,590	$ -	$ 4,590
5	OCA & SBA Assessments	$ 1,865	$ -	$ 1,865
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ 4,600	$ -	$ 4,600
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 1,285,131	$ (6,828)	$ 1,278,303
11	Utility Operating Income Before Income Taxes	$ (270,562)	$ 6,828	$ (263,734)
	Income Taxes:			
12	Federal Tax - Current	$ (80,267)	$ (301)	$ (80,568)
13	Pa. CNI Tax - Current	$ (42,422)	$ (159)	$ (42,581)
14	Federal Tax - Deferred	$ 11,546	$ -	$ 11,546
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (111,143)	$ (460)	$ (111,603)
19	Utility Operating Income	**$ (159,419)**	**$ 7,289**	**$ (152,130)**
20	Rate Base	$ 5,377,205	$ (1,000)	$ 5,376,205
21	Earned Rate of Return	-2.96%		-2.83%

Notes and Source

Col.A: Aqua filing, Exhibit 1-D, Schedule A-1
Col.B: Schedule C.1 P5
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Cheltenham Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 7,258,740	$ -	$ 7,258,740
	Operating Revenue Deductions			
2	Operating Expenses	$ 4,575,924	$ (8,719)	$ 4,567,205
3	Depreciation Expense	$ 1,011,770	$ -	$ 1,011,770
	Taxes Other Than Income:			
4	PUC Assessment	$ 32,837	$ -	$ 32,837
5	OCA & SBA Assessments	$ 13,343	$ -	$ 13,343
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 5,633,874	$ (8,719)	$ 5,625,155
11	Utility Operating Income Before Income Taxes	$ 1,624,866	$ 8,719	$ 1,633,585
	Income Taxes:			
12	Federal Tax - Current	$ (23,451)	$ (12,349)	$ (35,801)
13	Pa. CNI Tax - Current	$ (12,394)	$ (6,527)	$ (18,921)
14	Federal Tax - Deferred	$ 184,368	$ -	$ 184,368
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ 148,522	$ (18,876)	$ 129,646
19	Utility Operating Income	**$ 1,476,344**	**$ 27,595**	**$ 1,503,939**
20	Rate Base	$ 47,259,177	$ (7,000)	$ 47,252,177
21	Earned Rate of Return	3.12%		3.18%

Notes and Source

Col.A: Aqua filing, Exhibit 1-E, Schedule A-1
Col.B: Schedule C.1 P6
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Norriton Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 2,923,766	$ -	$ 2,923,766
2	Operating Expenses	$ 2,283,124	$ (8,665)	$ 2,274,460
3	Depreciation Expense	$ 952,641	$ -	$ 952,641
	Taxes Other Than Income:			
4	PUC Assessment	$ 13,226	$ -	$ 13,226
5	OCA & SBA Assessments	$ 5,374	$ -	$ 5,374
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 3,254,366	$ (8,665)	$ 3,245,702
11	Utility Operating Income Before Income Taxes	$ (330,600)	$ 8,665	$ (321,935)
	Income Taxes:			
12	Federal Tax - Current	$ (161,303)	$ (5,853)	$ (167,156)
13	Pa. CNI Tax - Current	$ (85,251)	$ (3,094)	$ (88,344)
14	Federal Tax - Deferred	$ 11,829	$ -	$ 11,829
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (234,724)	$ (8,947)	$ (243,671)
19	Utility Operating Income	**$ (95,875)**	**$ 17,611**	**$ (78,264)**
20	Rate Base	$ 25,308,104	$ (5,000)	$ 25,303,104
21	Earned Rate of Return	-0.38%		-0.31%

Notes and Source

Col.A: Aqua filing, Exhibit 1-F, Schedule A-1
Col.B: Schedule C.1 P7
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
New Garden Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 2,871,698	$ -	$ 2,871,698
	Operating Revenue Deductions			
2	Operating Expenses	$ 1,848,890	$ (12,705)	$ 1,836,185
3	Depreciation Expense	$ 735,834	$ -	$ 735,834
	Taxes Other Than Income:			
4	PUC Assessment	$ 12,991	$ -	$ 12,991
5	OCA & SBA Assessments	$ 5,279	$ -	$ 5,279
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 2,602,994	$ (12,705)	$ 2,590,289
11	Utility Operating Income Before Income Taxes	$ 268,704	$ 12,705	$ 281,409
	Income Taxes:			
12	Federal Tax - Current	$ (146,422)	$ (6,540)	$ (152,962)
13	Pa. CNI Tax - Current	$ (77,386)	$ (3,456)	$ (80,842)
14	Federal Tax - Deferred	$ 102,038	$ -	$ 102,038
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (121,770)	$ (9,996)	$ (131,766)
19	Utility Operating Income	**$ 390,474**	**$ 22,701**	**$ 413,175**
20	Rate Base	$ 30,246,226	$ (9,000)	$ 30,237,226
21	Earned Rate of Return	1.29%		1.37%

Notes and Source

Col.A: Aqua filing, Exhibit 1-G, Schedule A-1
Col.B: Schedule C.1 P8
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	Special Contract Revenue	Income Tax Expense - Repairs Deduction	Income Tax Expense - Interest Synchronization	General Inflation	Revenue for Post-COVID Customer Metered Water Sales	Purchased Power Expense	Chemicals Expense	Universal Service Program Expense
			C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9
1	Operating Revenues	$ 3,058,530		$ 301,307				$ 2,757,223			
	Operating Revenue Deductions										
2	Operating Expenses	$ (2,720,827)					$ (864,335)		$ 96,312	$ 66,787	$ -
3	Depreciation Expense	$ (121,865)	$ (121,865)								
	Taxes Other Than Income:										
4	PUC Assessment	$ -									
5	OCA & SBA Assessments	$ -									
6	Public Utility Realty Tax	$ -									
7	State Capital Stock Tax	$ -									
8	Local Property Taxes & Misc.	$ -									
9	Federal & State Payroll Tax	$ (93,467)									
10	PRE-TAX OPERATING EXPENSES	$ (2,936,159)	$ (121,865)	$ -	$ -	$ -	$ (864,335)	$ -	$ 96,312	$ 66,787	$ -
11	PRE-TAX OPERATING INCOME	$ 5,994,689	$ 121,865	$ 301,307	$ -	$ -	$ 864,335	$ 2,757,223	$ (96,312)	$ (66,787)	$ -
12	Federal Tax - Current	$ (1,478,010)	$ 23,035	$ 56,953	$ (1,513,860)	$ (1,097,272)	$ 163,377	$ 521,173	$ (18,205)	$ (12,624)	$ -
13	Pa. CNI Tax - Current	$ (781,147)	$ 12,174	$ 30,101	$ (800,094)	$ (579,922)	$ 86,347	$ 275,447	$ (9,622)	$ (6,672)	$ -
14	Federal Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (2,259,158)	$ 35,209	$ 87,054	$ (2,313,955)	$ (1,677,195)	$ 249,724	$ 796,619	$ (27,827)	$ (19,296)	$ -
19	TOTAL OPERATING EXPENSES	$ (5,195,317)	$ (86,656)	$ 87,054	$ (2,313,955)	$ (1,677,195)	$ (614,610)	$ 796,619	$ 68,486	$ 47,491	$ -
20	OPERATING INCOME	$ 8,253,847	$ 86,656	$ 214,253	$ 2,313,955	$ 1,677,195	$ 614,610	$ 1,960,603	$ (68,486)	$ (47,491)	$ -

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Advertising Expense	Payroll Expense	Stock-Based Compensation	Payroll Tax Expense	Employee Group Insurance	Insurance Expense	Rate Case Expense	Non-Rate Case Legal Expense	Supplemental Executive Retirement Program (SERP)
		C-10	C-11	C-12	C-13	C-14	C-15	C-16	C-17	C-18
1	Operating Revenues									
	Operating Revenue Deductions									
2	Operating Expenses	$ (50,000)	$ (267,031)	$ (780,493)		$ (23,285)	$ (71,428)	$ (106,762)	$ (24,981)	$ (695,612)
3	Depreciation Expense									
	Taxes Other Than Income:									
4	PUC Assessment									
5	OCA & SBA Assessments									
6	Public Utility Realty Tax									
7	State Capital Stock Tax									
8	Local Property Taxes & Misc.									
9	Federal & State Payroll Tax				$ (93,467)					
10	PRE-TAX OPERATING EXPENSES	$ (50,000)	$ (267,031)	$ (780,493)	$ (93,467)	$ (23,285)	$ (71,428)	$ (106,762)	$ (24,981)	$ (695,612)
11	PRE-TAX OPERATING INCOME	$ 50,000	$ 267,031	$ 780,493	$ 93,467	$ 23,285	$ 71,428	$ 106,762	$ 24,981	$ 695,612
12	Federal Tax - Current	$ 9,451	$ 50,474	$ 147,530	$ 17,667	$ 4,401	$ 13,501	$ 20,180	$ 4,722	$ 131,485
13	Pa. CNI Tax - Current	$ 4,995	$ 26,676	$ 77,971	$ 9,337	$ 2,326	$ 7,136	$ 10,665	$ 2,496	$ 69,492
14	Federal Tax - Deferred	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Federal & State Income Taxes	$ 14,446	$ 77,151	$ 225,501	$ 27,005	$ 6,728	$ 20,637	$ 30,846	$ 7,217	$ 200,977
19	TOTAL OPERATING EXPENSES	$ (35,554)	$ (189,880)	$ (554,992)	$ (66,462)	$ (16,558)	$ (50,791)	$ (75,916)	$ (17,763)	$ (494,635)
20	OPERATING INCOME	$ 35,554	$ 189,880	$ 554,992	$ 66,462	$ 16,558	$ 50,791	$ 75,916	$ 17,763	$ 494,635

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Wastewater Base Operations
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Income Tax Expense - Repairs Deduction C-3	Income Tax Expense - Interest Synchronization C-4	General Inflation C-5	Universal Service Program Expense C-9	Advertising Expense C-10	Payroll Expense C-11	Stock-Based Compensation C-12	Payroll Tax Expense C-13	Employee Group Insurance C-14	Insurance Expense C-15	Rate Case Expense C-16	Supplemental Executive Retirement Program (SERP)
1	Operating Revenues	$ -												
	Operating Revenue Deductions													
2	Operating Expenses	$ (307,488)			$ (145,368)	$ -	$ (5,000)	$ (19,342)	$ (66,000)		$ (4,113)	$ (710)	$ (9,905)	$ (57,050)
3	Depreciation Expense	$ -												
	Taxes Other Than Income:													
4	PUC Assessment	$ -												
5	OCA & SBA Assessments	$ -												
6	Public Utility Realty Tax	$ -												
7	State Capital Stock Tax	$ -												
8	Local Property Taxes & Misc.	$ -												
9	Federal & State Payroll Tax	$ (7,448)								$ (7,448)				
10	PRE-TAX OPERATING EXPENSES	$ (314,936)	$ -	$ -	$ (145,368)	$ -	$ (5,000)	$ (19,342)	$ (66,000)	$ (7,448)	$ (4,113)	$ (710)	$ (9,905)	$ (57,050)
11	PRE-TAX OPERATING INCOME	$ 314,936	$ -	$ -	$ 145,368	$ -	$ 5,000	$ 19,342	$ 66,000	$ 7,448	$ 4,113	$ 710	$ 9,905	$ 57,050
12	Federal Tax - Current	$ (31,584)	$ (43,673)	$ (47,440)	$ 27,478	$ -	$ 945	$ 3,656	$ 12,475	$ 1,408	$ 777	$ 134	$ 1,872	$ 10,784
13	Pa. CNI Tax - Current	$ (16,692)	$ (23,082)	$ (25,073)	$ 14,522	$ -	$ 500	$ 1,932	$ 6,593	$ 744	$ 411	$ 71	$ 990	$ 5,699
14	Federal Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (48,276)	$ (66,754)	$ (72,513)	$ 42,000	$ -	$ 1,445	$ 5,588	$ 19,069	$ 2,152	$ 1,188	$ 205	$ 2,862	$ 16,483
19	TOTAL OPERATING EXPENSES	$ (363,212)	$ (66,754)	$ (72,513)	$ (103,368)	$ -	$ (3,555)	$ (13,754)	$ (46,931)	$ (5,296)	$ (2,925)	$ (505)	$ (7,043)	$ (40,567)
20	OPERATING INCOME	$ 363,212	$ 66,754	$ 72,513	$ 103,368	$ -	$ 3,555	$ 13,754	$ 46,931	$ 5,296	$ 2,925	$ 505	$ 7,043	$ 40,567

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Limerick Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 8

Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (23,275)		$ (23,275)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (23,275)	$ -	$ (23,275)
11	PRE-TAX OPERATING INCOME	$ 23,275	$ -	$ 23,275
12	Federal Tax - Current	$ (12,695)	$ (17,094)	$ 4,400
13	Pa. CNI Tax - Current	$ (6,709)	$ (9,035)	$ 2,325
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (19,404)	$ (26,129)	$ 6,725
19	TOTAL OPERATING EXPENSES	$ (42,680)	$ (26,129)	$ (16,551)
20	OPERATING INCOME	$ 42,680	$ 26,129	$ 16,551

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Bradford Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 8

Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (6,828)		$ (6,828)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (6,828)	$ -	$ (6,828)
11	PRE-TAX OPERATING INCOME	$ 6,828	$ -	$ 6,828
12	Federal Tax - Current	$ (301)	$ (1,592)	$ 1,291
13	Pa. CNI Tax - Current	$ (159)	$ (841)	$ 682
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (460)	$ (2,433)	$ 1,973
19	TOTAL OPERATING EXPENSES	$ (7,289)	$ (2,433)	$ (4,855)
20	OPERATING INCOME	$ 7,289	$ 2,433	$ 4,855

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Cheltenham Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 8

Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (8,719)		$ (8,719)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (8,719)	$ -	$ (8,719)
11	PRE-TAX OPERATING INCOME	$ 8,719	$ -	$ 8,719
12	Federal Tax - Current	$ (12,349)	$ (13,997)	$ 1,648
13	Pa. CNI Tax - Current	$ (6,527)	$ (7,398)	$ 871
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (18,876)	$ (21,395)	$ 2,519
19	TOTAL OPERATING EXPENSES	$ (27,595)	$ (21,395)	$ (6,200)
20	OPERATING INCOME	$ 27,595	$ 21,395	$ 6,200

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Norriton Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 8

Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (8,665)		$ (8,665)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (8,665)	$ -	$ (8,665)
11	PRE-TAX OPERATING INCOME	$ 8,665	$ -	$ 8,665
12	Federal Tax - Current	$ (5,853)	$ (7,491)	$ 1,638
13	Pa. CNI Tax - Current	$ (3,094)	$ (3,959)	$ 866
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (8,947)	$ (11,450)	$ 2,503
19	TOTAL OPERATING EXPENSES	$ (17,611)	$ (11,450)	$ (6,161)
20	OPERATING INCOME	$ 17,611	$ 11,450	$ 6,161

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
New Garden Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 8 of 8

Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (12,705)		$ (12,705)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (12,705)	$ -	$ (12,705)
11	PRE-TAX OPERATING INCOME	$ 12,705	$ -	$ 12,705
12	Federal Tax - Current	$ (6,540)	$ (8,941)	$ 2,402
13	Pa. CNI Tax - Current	$ (3,456)	$ (4,726)	$ 1,269
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (9,996)	$ (13,667)	$ 3,671
19	TOTAL OPERATING EXPENSES	$ (22,701)	$ (13,667)	$ (9,034)
20	OPERATING INCOME	$ 22,701	$ 13,667	$ 9,034

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Capital Structure and Cost Rates

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule D
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 2

Line No.	Description	Percent	Cost Rate	Weighted Cost
		(A)	(B)	(C)
	Per Company			
1	Long Term Debt	46.08%	4.00%	1.84%
2	Common Equity	53.92%	10.75%	5.80%
3	Total Capital Structure	100.00%		7.64%
	Per OCA			
4	Long-Term Debt	50.00%	4.00%	2.00%
5	Common Equity	50.00%	8.00%	4.00%
6	Total Capital Structure	100.00%		6.00%
7	Difference			-1.640%
8	Weighted Cost of Debt			2.00%

Notes and Source:
Lines 1-3: Aqua Exhibit 1-A, Schedule E-1
Lines 4-6: Per the recommendation of OCA witness David Garrett

Aqua Pennsylvania, Inc.
Capital Structure and Cost Rates

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Wastewater Operations
Schedule D
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 2

Line No.	Description	Percent	Cost Rate	Weighted Cost
		(A)	(B)	(C)
	Per Company			
1	Long Term Debt	46.08%	4.00%	1.84%
2	Common Equity	53.92%	10.75%	5.80%
3	Total Capital Structure	100.00%		7.64%
	Per OCA			
4	Long Term Debt	50.00%	4.00%	2.00%
5	Common Equity	50.00%	8.00%	4.00%
6	Total Capital Structure	100.00%		6.00%
7	Difference			-1.640%
8	Weighted Cost of Debt			2.00%

Notes and Source:
Lines 1-3: Aqua Exhibit 1-B through 1-G, Schedule E-1
Lines 4-6: Per the recommendation of OCA witness David Garrett

Aqua Pennsylvania, Inc.
Docket Nos. R-2021-3027385 and R-2021-3027386
Exhibit LA-2
Adjustment Schedules
Accompanying the Direct Testimony of Ralph Smith

Number	Description	Water, Wastewater, or Both	Confidential?	No. of Pages	Page No.
	Revenue Requirement Summary Schedules - Fully Projected Future Test Year Ending 3/31/2023				
	Rate Base Adjustments				
B-1	Utility Plant Acquisition Adjustments - Phoenixville Water	Water	No	1	2
B-2	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	Both	No	1	3
B-3	Cash Working Capital	Both	No	7	4-10
	Net Operating Income Adjustments				
C-1	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	Water	No	1	11
C-2	Special Contract Revenue	Water	No	1	12
C-3	Income Tax Expense - Repairs Deduction	Both	No	1	13
C-4	Income Tax Expense - Interest Synchronization	Both	No	8	14-21
C-5	General Inflation	Both	No	1	22
C-6	Revenue for Post-COVID Customer Metered Water Sales	Water	No	1	23
C-7	Purchased Power Expense	Water	No	1	24
C-8	Chemicals Expense	Water	No	1	25
C-9	Universal Service Program Expense	Both	No	1	26
C-10	Advertising Expense	Both	No	1	27
C-11	Payroll Expense	Both	No	5	28-32
C-12	Stock-Based Compensation	Both	No	1	33
C-13	Payroll Tax Expense	Both	No	1	34
C-14	Employee Group Insurance	Both	No	1	35
C-15	Insurance Expense	Both	No	1	36
C-16	Rate Case Expense	Both	No	1	37
C-17	Non-Rate Case Legal Expense	Water	No	2	38-39
C-18	Supplemental Executive Retirement Program (SERP)	Both	No	1	40
	Total Pages (including Contents page)			40	

Aqua Pennsylvania, Inc.
Utility Plant Acquisition Adjustments - Phoenixville Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water Operations
Schedule B-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Amount (A)
1	Adjustment to Remove Phoenixville Water from Acquisition Adjustments from Aqua's Proposed Rate Base	$ (2,315,440)

Notes and Source:
Company Exhibit 1-A Water, Schedule G-3
See direct testimony of OCA witness Morgan DeAngelo

Aqua Pennsylvania, Inc.
Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule B-2
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	CIAC	Customer Advances	CIAC and Customer Advances 3/31/2021	Projected for 3/31/2022	Projected for 3/31/2023
		(A)	(B)	(C)	(D)	(E)
	I. Water					
1	3/31/2021 Actual	$ (135,584,031)	$ (55,266,575)	$ (190,850,606)		
2	3/31/2021 Used by Aqua on Schedule G-6, Exhibit 1-A			$ (184,419,150)	$ (181,255,810)	$ (178,784,735)
3	OCA Adjustment to 3/31/2021 balances			$ (6,431,456)		
4	OCA Adjustment to 3/31/2022 and 3/31/2023 balances				$ (6,431,456)	$ (6,431,456)
5	OCA Adjusted 3/31/2022 and 3/31/2023 balances				$ (187,687,266)	$ (185,216,191)
	II. Wastewater					
6	3/31/2021 Actual	$ (20,202,852)	$ (2,987,722)	$ (23,190,574)		
7	3/31/2021 Used by Aqua on Schedule G-6, Exhibit 1-B			$ (20,196,246)	$ (21,515,117)	$ (20,965,154)
8	OCA Adjustment to 3/31/2021 balances			$ (2,994,328)		
9	OCA Adjustment to 3/31/2022 and 3/31/2023 balances				$ (2,994,328)	$ (2,994,328)
10	OCA Adjusted 3/31/2022 and 3/31/2023 balances				$ (24,509,445)	$ (23,959,482)

Notes and Source
Line 1 & 6: Aqua's responses to OCA-VII-11 and OCA-VII-12

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 69,499,551	$ 5,733,092	$ 75,232,643	91.3	$ 6,864,978,674
2	PennVest-Interest	$ 872,044	$ 71,936	$ 943,979	15.2	$ 14,356,352
3	Total	$ 70,371,594	$ 5,805,028	$ 76,176,622		$ 6,879,335,026
4	Average Lag Days in Payment of Interest				90.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				45.1	Schedule G-5.1 from Exhibit 1-A
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(45.2)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 208,703	
9	Cash Working Capital Required				$ (9,433,379)	
10	Cash Working Capital Per OCA				$ (9,433,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (8,715,000)	
12	OCA Adjustment to Cash Working Capital				$ (718,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-A

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 69,499,551	98.76%
14	PennVest-Interest	$ 872,044	1.24%
15	Total Interest	$ 70,371,594	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 75,232,643	
17	PennVest-Interest	$ 943,979	
18	Total Interest	$ 76,176,622	Schedule C-4, page 2

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)	
1	Long Term Debt- Interest	$ 3,656,035	$ 250,978	$ 3,907,013	91.3	$ 356,514,958	
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -	
3	Total	$ 3,656,035	$ 250,978	$ 3,907,013		$ 356,514,958	
4	Average Lag Days in Payment of Interest				91.3		Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				50.2		Schedule G-5.1 from Exhibit 1-B
6	Average Lag Days between Payment of Interest						
7	and Receipt of Revenue				(41.1)		L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 10,704		
9	Cash Working Capital Required				$ (439,940)		
10	Cash Working Capital Per OCA				$ (440,000)		* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (412,000)		
12	OCA Adjustment to Cash Working Capital				$ (28,000)		

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-B

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 3,656,035	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 3,656,035	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 3,907,013	
17	PennVest-Interest	$ -	
18	Total Interest	$ 3,907,013	Schedule C-4, page 3

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater Limerick

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 1,064,281	$ 90,437	$ 1,154,717	91.3	$ 105,367,946
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -
3	Total	$ 1,064,281	$ 90,437	$ 1,154,717		$ 105,367,946
4	Average Lag Days in Payment of Interest				91.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				49.7	Schedule G-5.1 from Exhibit 1-C
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(41.6)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 3,164	
9	Cash Working Capital Required				$ (131,606)	
10	Cash Working Capital Per OCA				$ (132,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (121,000)	
12	OCA Adjustment to Cash Working Capital				$ (11,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-C

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 1,064,281	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 1,064,281	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 1,154,717	
17	PennVest-Interest	$ -	
18	Total Interest	$ 1,154,717	Schedule C-4, page 4

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater East Bradford

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)	
1	Long Term Debt- Interest	$ 99,102	$ 8,422	$ 107,524	91.3	$ 9,811,575	
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -	
3	Total	$ 99,102	$ 8,422	$ 107,524		$ 9,811,575	
4	Average Lag Days in Payment of Interest				91.3		Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				48.1		Schedule G-5.1 from Exhibit 1-D
6	Average Lag Days between Payment of Interest						
7	and Receipt of Revenue				(43.2)		L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 295		
9	Cash Working Capital Required				$ (12,726)		
10	Cash Working Capital Per OCA				$ (13,000)		* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (12,000)		
12	OCA Adjustment to Cash Working Capital				$ (1,000)		

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-D

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 99,102	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 99,102	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 107,524	
17	PennVest-Interest	$ -	
18	Total Interest	$ 107,524	Schedule C-4, page 5

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater Cheltenham

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 870,992	$ 74,052	$ 945,044	91.3	$ 86,235,223
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -
3	Total	$ 870,992	$ 74,052	$ 945,044		$ 86,235,223
4	Average Lag Days in Payment of Interest				91.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				57.2	Schedule G-5.1 from Exhibit 1-E
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(34.1)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 2,589	
9	Cash Working Capital Required				$ (88,290)	
10	Cash Working Capital Per OCA				$ (88,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (81,000)	
12	OCA Adjustment to Cash Working Capital				$ (7,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-E

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 870,992	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 870,992	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 945,044	
17	PennVest-Interest	$ -	
18	Total Interest	$ 945,044	Schedule C-4, page 6

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater East Norriton

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 466,431	$ 39,631	$ 506,062	91.3	$ 46,178,164
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -
3	Total	$ 466,431	$ 39,631	$ 506,062		$ 46,178,164
4	Average Lag Days in Payment of Interest				91.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				44.1	Schedule G-5.1 from Exhibit 1-F
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(47.2)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 1,386	
9	Cash Working Capital Required				$ (65,441)	
10	Cash Working Capital Per OCA				$ (65,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (60,000)	
12	OCA Adjustment to Cash Working Capital				$ (5,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-F

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 466,431	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 466,431	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 506,062	
17	PennVest-Interest	$ -	
18	Total Interest	$ 506,062	Schedule C-4, page 7

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - New Garden

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)	
1	Long Term Debt- Interest	$ 557,441	$ 47,303	$ 604,745	91.3	$ 55,182,937	
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -	
3	Total	$ 557,441	$ 47,303	$ 604,745		$ 55,182,937	
4	Average Lag Days in Payment of Interest				91.3		Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				22.9		Schedule G-5.1 from Exhibit 1-G
6	Average Lag Days between Payment of Interest						
7	and Receipt of Revenue				(68.4)		L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 1,657		
9	Cash Working Capital Required				$ (113,327)		
10	Cash Working Capital Per OCA				$ (113,000)		* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (104,000)		
12	OCA Adjustment to Cash Working Capital				$ (9,000)		

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-G

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 557,441	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 557,441	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 604,745	
17	PennVest-Interest	$ -	
18	Total Interest	$ 604,745	Schedule C-4, page 8

Aqua Pennsylvania, Inc.
Utility Plant Acquisition Adjustments Amortization - Phoenixville Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Amount
		(A)
1	Adjustment to Remove Phoenixville Water Acquistion Adjustment Amortization	$ (121,865)

Notes and Source

Company Exhibit 1-A Water, Schedule G-3
See Direct Testimony of OCA witness Morgan DeAngelo

Aqua Pennsylvania, Inc.
Special Contract Revenue

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-2
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Amount (A)
1	Adjustment to Increase FPFTY Special Contract Revenues	$ 301,307

Notes and Source:
See Direct Testimony of OCA Witness Glenn Watkins

Aqua Pennsylvania, Inc.
Income Tax Expense - Repairs Deduction

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Total Company	Water Operations	Wastewater Operations
		(A)	(B)	(C)
1	Per Company	$ (159,060,000)	$ (154,600,000)	$ (4,460,000)
2	Per OCA	$ (167,300,000)	$ (162,608,953)	$ (4,691,047)
3	Adjustment to Repairs Deductions before Income Taxes	$ (8,240,000)	$ (8,008,953)	$ (231,047)
4	State Income Tax Rate	9.99%	9.99%	9.99%
5	State Income Taxes	$ 823,176	$ 800,094	$ 23,082
6	Adjustment to Repairs Deduction after State Income Taxes	$ (7,416,824)	$ (7,208,858)	$ (207,966)
7	Federal Income Tax Rate	21.00%	21.00%	21.00%
8	Federal Income Taxes	$ 1,557,533	$ 1,513,860	$ 43,673
9	Income Tax Expense Impacts	$ 2,380,709	$ 2,313,955	$ 66,754
10	Adjustment to State and Federal Income Tax Expense for Repairs Deductions	$ (2,380,709)	$ (2,313,955)	$ (66,754)

Notes and Source:

Line 1: Direct Testimony of Aqua Witness Christina L. Saball, Page 5 and Schedule F-2 from Exhibits 1-A and 1-B
Line 2, Col. A: Amount from the response to OCA-X-27
Line 3: Line 2 - Line 1
Line 9: Line 5 + Line 8
Line 10: -Line 9
Cols. B and C, Line 1: Breakout between Water and Wastewater

11	Repairs Deduction Reflected in Filing Broken Out Between Water and Wastewater	$ (154,600,000)	$ (4,460,000)
12	Total Company Repairs Deduction Reflected in Filing	$ (159,060,000)	$ (159,060,000)
13	Percentage	97.20%	2.80%
14	Total Repairs Deduction Projected to be Incurred	$ (167,300,000)	$ (167,300,000)
15	Repairs Deduction Projected to be Incurred Broken Out Between Water and Wastewater	$ (162,608,953)	$ (4,691,047)

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 8

Line No.	Description	Water	Base Wastewater	Limerick Wastewater	East Bradford Wastewater	Cheltenham Wastewater	East Norriton Wastewater	New Garden Wastewater
		(A)	(B)	(C)	(D)	(E)	(F)	(G)
1	Increase (Decrease) to State Income Tax Expense	$ (579,922)	$ (25,073)	$ (9,035)	$ (841)	$ (7,398)	$ (3,959)	$ (4,726)
2	Increase (Decrease) to Federal Income Tax Expense	$ (1,097,272)	$ (47,440)	$ (17,094)	$ (1,592)	$ (13,997)	$ (7,491)	$ (8,941)
3	Increase (Decrease) to Income Tax Expense	$ (1,677,195)	$ (72,513)	$ (26,129)	$ (2,433)	$ (21,395)	$ (11,450)	$ (13,667)

Notes and Source:
See pages 2 through 8 of this schedule

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Water
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 3,808,831,116	Schedule B , page 1
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 1
3	Going-Level Interest Deduction for Tax Purposes	$ 76,176,622	L1 x L2
4	Interest Deduction per Company	$ 70,371,594	Note A
5	Decrease in Deductible Interest	$ 5,805,028	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (579,922)	L5 x L6
8	Federal Taxable Income	$ 5,225,106	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (1,097,272)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (1,677,195)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-A, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Base Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 195,350,662	Schedule B , page 2
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 1
3	Going-Level Interest Deduction for Tax Purposes	$ 3,907,013	L1 x L2
4	Interest Deduction per Company	$ 3,656,035	Note A
5	Decrease in Deductible Interest	$ 250,978	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (25,073)	L5 x L6
8	Federal Taxable Income	$ 225,906	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (47,440)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (72,513)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-B, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Limerick Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 57,735,861	Schedule B , page 3
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 1,154,717	L1 x L2
4	Interest Deduction per Company	$ 1,064,281	Note A
5	Decrease in Deductible Interest	$ 90,437	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (9,035)	L5 x L6
8	Federal Taxable Income	$ 81,402	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (17,094)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (26,129)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-C, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Bradford Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 5,376,205	Schedule B , page 4
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 107,524	L1 x L2
4	Interest Deduction per Company	$ 99,102	Note A
5	Decrease in Deductible Interest	$ 8,422	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (841)	L5 x L6
8	Federal Taxable Income	$ 7,580	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (1,592)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (2,433)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-D, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
Cheltenham Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 47,252,177	Schedule B , page 5
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 945,044	L1 x L2
4	Interest Deduction per Company	$ 870,992	Note A
5	Decrease in Deductible Interest	$ 74,052	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (7,398)	L5 x L6
8	Federal Taxable Income	$ 66,654	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (13,997)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (21,395)	L7 + L10

Notes and Source:

Note A: Aqua filing, Exhibit 1-E, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
East Norriton Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 25,303,104	Schedule B , page 6
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 506,062	L1 x L2
4	Interest Deduction per Company	$ 466,431	Note A
5	Decrease in Deductible Interest	$ 39,631	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (3,959)	L5 x L6
8	Federal Taxable Income	$ 35,672	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (7,491)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (11,450)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-F, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-1
New Garden Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 8 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 30,237,226	Schedule B , page 7
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 604,745	L1 x L2
4	Interest Deduction per Company	$ 557,441	Note A
5	Decrease in Deductible Interest	$ 47,303	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (4,726)	L5 x L6
8	Federal Taxable Income	$ 42,578	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (8,941)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (13,667)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-G, Schedule A-1

Aqua Pennsylvania, Inc.
General Inflation

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-5
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Total Company (A)	Water Operations (B)	Wastewater Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Remove General Inflation for the period April 1, 2021 - March 31, 2022	$ (540,322)	$ (437,288)	$ (72,763)	$ (11,705)	$ (3,434)	$ (4,385)	$ (4,357)	$ (6,390)
2	Remove General Inflation for the period April 1, 2022 - March 31, 2023	$ (529,573)	$ (427,047)	$ (72,605)	$ (11,570)	$ (3,394)	$ (4,334)	$ (4,307)	$ (6,316)
3	Total Adjustment to Remove General Inflation	$ (1,069,895)	$ (864,335)	$ (145,368)	$ (23,275)	$ (6,828)	$ (8,719)	$ (8,665)	$ (12,705)

Notes and Source:
Col B: Exhibit 1-A, Schedule C-4.1 from the Company's filing
Col C: Exhibit 1-B, Schedule C-4.1 from the Company's filing
Col D: Exhibit 1-C, Schedule C-4.1 from the Company's filing
Col E: Exhibit 1-D, Schedule C-4.1 from the Company's filing
Col F: Exhibit 1-E, Schedule C-4.1 from the Company's filing
Col G: Exhibit 1-F, Schedule C-4.1 from the Company's filing
Col H: Exhibit 1-G, Schedule C-4.1 from the Company's filing

Aqua Pennsylvania, Inc.
Revenue for Post-COVID Customer Metered Water Sales

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-6
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Per Company (A)	Per OCA (B)	Adjustment (C) = (B) - (A)
	Metered Water Sales Revenue			
1	Residential	$ (11,028,890)	$ (8,271,668)	$ 2,757,223
2	Commercial	$ 9,747,027	$ 9,747,027	$ -
3	Public Authority	$ 1,217,224	$ 1,217,224	$ -
4	Total Adjustment to Metered Water Sales	$ (64,639)	$ 2,692,584	$ 2,757,223

Notes and Source:
Col. A: Exhibit 1-A, Schedule B-7 from the Company's filing
Col. B: Allowance of 75% of Company adjustment, reflecting continuing higher residential water usage into the FPFTY

Aqua Pennsylvania, Inc.
Purchased Power Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-7
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	OCA Adjustment (A)
1	Adjustment to Purchased Power Expense related to Post-COVID Customer Metered Water Sales (Line 8)	$ 96,312

Notes and Source:

Per Aqua Exhibit 1-A, Schedule 6.1, Exhibit 5-A, Part II, Schedule 5, and Exhibit 5-A, Part II, Schedule 6, Page 2:

2	Total Purchased Power Expense in FPFTY (Aqua Exhibit 1-A, Schedule 6.1)	$ 8,182,196
3	Total Residential Metered Water Consumption (Aqua Exhibit 5-A, Part II, Schedule 5, Page 1)	190,268,063,000
4	Purchased Power Expense per Gallon (Line 2 / Line 3)	$ 0.00004300
5	Company COVID-19 Residential Metered Water Consumption Adjustment (Exhibit 5-A, Part II, Schedule 6, Page 2)	(8,958,549,000)
6	OCA Residential Metered Water Consumption Allowance	(6,718,911,750)
7	Gallons Added back to Residential Metered Water Sales (Line 6 - Line 5)	2,239,637,250
8	Adjustment to Purchased Power Expense related to Post-COVID Customer Metered Water Sales (Line 4 x Line 7)	96,312

Aqua Pennsylvania, Inc.
Chemicals Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-8
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	OCA Adjustment (A)
1	Adjustment to Chemicals Expense related to Post-COVID Customer Metered Water Sales (Line 8)	$ 66,787

Notes and Source:

Per Aqua Exhibit 1-A, Schedule 6.2, Exhibit 5-A, Part II, Schedule 5, and Exhibit 5-A, Part II, Schedule 6, Page 2:

2	Total Chemicals Expense in FPFTY (Aqua Exhibit 1-A, Schedule 6.2)	$ 5,673,915
3	Total Residential Metered Water Consumption (Aqua Exhibit 5-A, Part II, Schedule 5, Page 1)	190,268,063,000
4	Chemicals Expense per Gallon (Line 2 / Line 3)	$ 0.00002982
5	Company COVID-19 Residential Metered Water Consumption Adjustment (Exhibit 5-A, Part II, Schedule 6, Page 2)	(8,958,549,000)
6	OCA Residential Metered Water Consumption Allowance	(6,718,911,750)
7	Gallons Added back to Residential Metered Water Sales (Line 6 - Line 5)	2,239,637,250
8	Adjustment to Chemicals Expense related to Post-COVID Customer Metered Water Sales (Line 4 x Line 7)	66,787

Aqua Pennsylvania, Inc.
Universal Service Program Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-9
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Water Operations (A)	Wastewater Operations (B)	Total Company (C)
1	Adjustment to Increase Operating Expenses for the Universal Service Program	$ -	$ -	$ -

Notes and Source:
See Direct Testimony of OCA Witness Roger Colton

Aqua Pennsylvania, Inc.
Adverstising Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule C-10
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Per Aqua HTY 3/31/2021 (A)	Per Aqua FTY 3/31/2022 (B)	Per Aqua FPFTY 3/31/2023 (C)	Per OCA FPFTY 3/31/2023 (D)	OCA Adjustment (E) = (D) - (C)
	Water					
1	Public Health and Safety	$ 279,803	$ 284,701	$ 288,495	$ 288,495	$ -
2	Conservation of Energy	$ -	$ -	$ -	$ -	$ -
3	Explanation of Billing Practicies, Rates, Rules, and Regulations	$ -	$ -	$ 75,000	$ 25,000	$ (50,000)
4	Provision of Factual and Objective Data Programs	$ -	$ -	$ -	$ -	$ -
5	Other Advertising Programs	$ 4,091	$ 4,163	$ 5,315	$ 5,315	$ -
6	Total	$ 283,894	$ 288,864	$ 368,810	$ 318,810	$ (50,000)
	Increase over Previous Year:					
7	Dollar Amount		$ 4,970	$ 79,946		
8	Percent Increase		1.75%	27.68%		
	Wastewater					
9	Public Health and Safety	$ -	$ -	$ -	$ -	$ -
10	Conservation of Energy	$ -	$ -	$ -	$ -	$ -
11	Explanation of Billing Practicies, Rates, Rules, and Regulations	$ -	$ -	$ 7,500	$ 2,500	$ (5,000)
12	Provision of Factual and Objective Data Programs	$ -	$ -	$ -	$ -	$ -
13	Other Advertising Programs	$ -	$ -	$ -	$ -	$ -
14	Total	$ -	$ -	$ 7,500	$ 2,500	$ (5,000)
	Increase over Previous Year:					
15	Dollar Amount		$ -	$ 7,500		
16	Percent Increase		0.00%	0.00%		

Notes and Source:
Company response to I&E-RE-33-D

Aqua Pennsylvania, Inc.
Payroll Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 5

Line No.	Description	Water Amount (A)	Wastewater Amount (B)	Total (C)
1	OCA Adjustment to Payroll Expense for Vacant Positions	$ (119,358)	$ (6,855)	$ (126,213)
2	OCA Adjustment to Payroll Expense for Non-Union Seasonal Employees	$ (147,673)	$ (12,487)	$ (160,160)
3	Total OCA Adjustment to Payroll Expense	$ (267,031)	$ (19,342)	$ (286,373)

Notes and Source

Line 1: See pages 2 and 3
Line 2: See pages 4 and 5

Aqua Pennsylvania, Inc.
Payroll Expense - Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 5

Line No.	Description	Per Company 3/31/2023 Amount	Per OCA 3/31/2023 Amount	OCA Adjustment
		(A)	(B)	(C)
	Non-Union Payroll			
1	Gross Payroll	$ 21,495,994	$ 21,423,811	$ (72,184)
2	Capital Payroll	$ 6,100,063	$ 6,079,578	$ (20,484)
3	Non-Operating Payroll	$ 333,175	$ 332,056	$ (1,119)
4	Expensed Non-Union Payroll Expense	$ 15,062,757	$ 15,012,176	$ (50,581)
	Union Payroll			
5	Gross Payroll	$ 31,871,426	$ 31,770,693	$ (100,733)
6	Capital Payroll	$ 9,782,358	$ 9,751,440	$ (30,918)
7	Non-Operating Payroll	$ 328,348	$ 327,311	$ (1,038)
8	Expensed Union Payroll Expense	$ 21,760,720	$ 21,691,942	$ (68,777)
9	Total Payroll Expense	$ 36,823,476	$ 36,704,118	$ (119,358)

Notes and Source

Col. A: Amounts from Schedule C-4.5 from Aqua PA filing

Col. B: Amounts from OCA Highly Confidential workpaper based on a 2.88% vacancy rate per the response to I&E-RE-22-D (calculated below):

	Description	Amount	
10	Authorized Regular Hours	1,208,480	
11	Actual Regular Hours	1,173,669	
12	Vacancy Rate	34,811	2.88%

Aqua Pennsylvania, Inc.
Payroll Expense - Wastewater - Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 5

Line No.	Description	Per Company 3/31/2023 Amount (A)	Per OCA 3/31/2023 Amount (B)	OCA Adjustment (C)
	Non-Union Payroll			
1	Gross Payroll	$ 1,198,973	$ 1,194,947	$ (4,026)
2	Capital Payroll	$ 188,026	$ 187,395	$ (631)
3	Non-Operating Payroll	$ 6,468	$ 6,446	$ (22)
4	Expensed Non-Union Payroll Expense	$ 1,004,479	$ 1,001,106	$ (3,373)
	Union Payroll			
5	Gross Payroll	$ 1,105,986	$ 1,102,491	$ (3,496)
6	Capital Payroll	$ 2,393	$ 2,385	$ (8)
7	Non-Operating Payroll	$ 2,009	$ 2,003	$ (6)
8	Expensed Union Payroll Expense	$ 1,101,584	$ 1,098,103	$ (3,482)
9	Total Payroll Expense	$ 2,106,063	$ 2,099,209	$ (6,855)

Notes and Source

Col. A: Amounts from Schedule C-4.5 from Aqua PA filing

Col. B: Amounts from OCA Highly Confidential workpaper based on a 2.88% vacancy rate per the response to I&E-RE-22-D (calculated below):

	Description	Amount	
10	Authorized Regular Hours	1,208,480	
11	Actual Regular Hours	1,173,669	
12	Vacancy Rate	34,811	2.88%

Aqua Pennsylvania, Inc.
Payroll Expense - Water - Seasonal Employee Count

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 5

Line No.	Description	Per Company 3/31/2023 Amount (A)	Per OCA 3/31/2023 Amount (B)	OCA Adjustment (C)	Reference
1	Authorized Non-Union Seasonal Employees	33	11		
2	FPFTY Payroll Expense Per Non-Union Seasonal Employee	$ 7,280	$ 7,280		
3	FPFTY Payroll Expense For Non-Union Seasonal Employees	$ 240,240	$ 80,080	$ (160,160)	
4	Allocation to Water Operations			92.20%	Line 6
5	FPFTY Payroll Expense For Non-Union Seasonal Employees - Water Operations			$ (147,673)	

Notes and Source

Col. A: Amounts from Exhibit 2, Schedule 2 from Company filing
Col. B: OCA seasonal employee level reflects the actual non-union seasonal positions as of June 30, 2021 per I&E-RE-97-D

	Description	Amount	Ratio	Reference
6	FPFTY Water Non-Union Gross Payroll Expense	$21,495,994	92.20%	Aqua Sch. C-4.5
7	FPFTY Sewer Non-Union Gross Payroll Expense	$ 1,817,730	7.80%	Aqua Sch. C-4.5
8	Total FPFTY Non-Union Gross Payroll Expense	$23,313,724	100.00%	
	Portion of Non-Union Seasonal Payroll Expense Allocated to Water Operations			
9	Authorized Non-Union Seasonal Employees	33		
10	FPFTY Payroll Expense Per Non-Union Seasonal Position	$ 7,280		
11	FPFTY Payroll Expense For Non-Union Seasonal Positions	$ 240,240		
12	Percentage of Non-Union Seasonal Positions Allocated to Water Operations	92.20%	Line 6	
13	Non-Union Seasonal Payroll Expense Allocated to Water Operations	$ 221,509		

Aqua Pennsylvania, Inc.
Payroll Expense - Wastewater - Base - Seasonal Employee Count

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Wastewater Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 5

Line No.	Description	Per Company 3/31/2023 Amount (A)	Per OCA 3/31/2023 Amount (B)	OCA Adjustment (C)	Reference
1	Authorized Non-Union Seasonal Employees	33	11		
2	FPFTY Payroll Expense Per Non-Union Seasonal Employee	$ 7,280	$ 7,280		
3	FPFTY Payroll Expense For Non-Union Seasonal Employees	$ 240,240	$ 80,080	$ (160,160)	
4	Allocation to Wastewater Operations			7.80%	Line 7
5	FPFTY Payroll Expense For Non-Union Seasonal Employees - Wastewater Operations			$ (12,487)	

Notes and Source

Col. A: Amounts from Exhibit 2, Schedule 2 from Company filing
Col. B: OCA seasonal employee level reflects the actual non-union seasonal positions as of June 30, 2021 per I&E-RE-97-D

	Description	Amount	Ratio	Reference
6	FPFTY Water Non-Union Gross Payroll Expense	$21,495,994	92.20%	Aqua Sch. C-4.5
7	FPFTY Sewer Non-Union Gross Payroll Expense	$ 1,817,730	7.80%	Aqua Sch. C-4.5
8	Total FPFTY Non-Union Gross Payroll Expense	$23,313,724	100.00%	
	Portion of Non-Union Seasonal Payroll Expense Allocated to Wastewater Operations			
9	Authorized Non-Union Seasonal Employees	33		
10	FPFTY Payroll Expense Per Non-Union Seasonal Position	$ 7,280		
11	FPFTY Payroll Expense For Non-Union Seasonal Positions	$ 240,240		
12	Percentage of Non-Union Seasonal Positions Allocated to Wastewater Operations	7.80%	Line 7	
13	Non-Union Seasonal Payroll Expense Allocated to Wastewater Operations	$ 18,731		

Aqua Pennsylvania, Inc.
Stock-Based Compensation

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule C-12
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Water Amount (A)	Wastewater Amount (B)	Total (C)	Reference
1	Stock Options Compensation	$ (105,480)	$ (105,480)		
2	Restricted Stock Units	$ (282,019)	$ (282,019)		
3	Performance Share Units	$ (458,994)	$ (458,994)		
4	Total Stock-Based Compensation	$ (846,493)	$ (846,493)		
5	Allocation to Water and Wastewater Operations	92.20%	7.80%		Lines 7 & 8
6	OCA Adjustment to Stock-Based Compensation Expense	$ (780,493)	$ (66,000)	$ (846,493)	

Notes and Source

Lines 1-3: Amounts from the response to I&E-RE-24-D

	Description	Amount	Ratio	Reference
7	FPFTY Water Non-Union Gross Payroll Expense	$21,495,994	92.20%	Aqua Sch. C-4.5
8	FPFTY Sewer Non-Union Gross Payroll Expense	$ 1,817,730	7.80%	Aqua Sch. C-4.5
9	Total FPFTY Non-Union Gross Payroll Expense	$23,313,724	100.00%	

Aqua Pennsylvania, Inc.
Payroll Tax Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule C-13
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Reference	Payroll Expense Adjustment	FICA Tax 6.20%	Medicare Tax 1.45%	FUTA Tax 0.60%	SUTA Tax 4.39%	Payroll Tax Expense Adjustment
			(A)	(B)	(C)	(D)	(E)	(F)
	Water Operations							
1	OCA Adjustment to Payroll Expense for Non-Union Seasonal Employees	A	$ (147,673)	$ (9,156)	$ (2,141)	$ (886)	$ (6,487)	$ (18,670)
2	OCA Adjustment to Non-Union Payroll Expense - Vacancy Rate	A	$ (50,581)	$ (3,136)	$ (733)	$ (303)	$ (2,222)	$ (6,394)
3	OCA Adjustment to Union Payroll Expense - Vacancy Rate	A	$ (68,777)	$ (4,264)	$ (997)	$ (413)	$ (3,021)	$ (8,695)
4	OCA Adjustment to Stock-Based Compensation Expense	B	$ (780,493)	$ (48,391)	$ (11,317)	$ -	$ -	$ (59,708)
5	Total of OCA Adjustments to Water Operations		$ (1,047,524)	$ (64,947)	$ (15,188)	$ (1,602)	$ (11,730)	$ (93,467)
	Wastewater Operations							
6	OCA Adjustment to Payroll Expense for Non-Union Seasonal Employees	A	$ (12,487)	$ (774)	$ (181)	$ (75)	$ (549)	$ (1,579)
7	OCA Adjustment to Non-Union Payroll Expense - Vacancy Rate	A	$ (3,373)	$ (209)	$ (3)	$ (20)	$ (148)	$ (380)
8	OCA Adjustment to Union Payroll Expense - Vacancy Rate	A	$ (3,482)	$ (216)	$ (50)	$ (21)	$ (153)	$ (440)
9	OCA Adjustment to Stock-Based Compensation Expense	B	$ (66,000)	$ (4,092)	$ (957)	$ -	$ -	$ (5,049)
10	Total of OCA Adjustments to Wastewater Operations		$ (85,342)	$ (5,291)	$ (1,191)	$ (116)	$ (850)	$ (7,448)
11	Total Adjustment to Payroll Tax Expense	L5 + L10	$ (1,132,866)	$ (70,238)	$ (16,379)	$ (1,718)	$ (12,580)	$ (100,915)

Notes and Source

A: See Schedule C-11
B: See Schedule C-12

Aqua Pennsylvania, Inc.
Employee Group Insurance

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule C-14
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Per Company	Per OCA	OCA Adjustment
	Water Operations	(A)	(B)	(C)
1	Medical/Prescription/Vision	$ 7,807,216	$ 7,776,788	$ (30,428)
2	Life/ADD/LTD	$ 565,649	$ 563,445	$ (2,205)
3	Dental	$ 162,148	$ 161,516	$ (632)
4	Total Group Insurance Expense	$ 8,535,013	$ 8,501,748	$ (33,265)
5	Captalization Rate	30%	30%	
6	Capitalized portion not charged to operating expense	$ (2,560,504)	$ (2,550,524)	$ 9,979
7	O&M Group Insurance Expense for Water Operations	$ 5,974,509	$ 5,951,224	$ (23,285)
	Wastewater Operations			
8	Wastewater Intracompany Benefits Charged to O&M	$ 1,263,638	$ 1,259,525	$ (4,113)

Notes and Source

Col. A, lines 1-7: Amounts from Exhibit 1-A, Schedule C-8.1 from Aqua's filing
Col. A, line 8: Amount from Exhibit 1-B Wastewater Base, Schedule C-8.1 from Aqua's filing
Col. B, lines 1-4: Amounts from OCA Highly Confidential workpaper based on a 2.88% vacancy rate per the response to I&E-RE-22-D
Col. B, line 8 calculated below:

	Description	Per Company*	Per OCA	Reference
9	Expensed Non-Union Payroll Expense	$ 1,004,479	$ 1,001,106	OCA Sch. C-11
10	Expensed Union Payroll Expense	$ 1,101,584	$ 1,098,103	OCA Sch. C-11
11	Total Payroll Expense	$ 2,106,063	$ 2,099,209	
12	Intercompany Benefits Rate	60%	60%	Exh. 1-B Wastewater Base from Aqua's filing
13	Wastewater Intracompany Benefits Charged to O&M	$ 1,263,638	$ 1,259,525	

* Company amounts from Schedule C-4.5 from Aqua's water and wastewater base filings

Aqua Pennsylvania, Inc.
Insurance Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule C-15
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Per Company (A)	Per OCA (B)	OCA Adjustment (C)
	Water Operations			
1	General Liability	$ 3,980,563	$ 3,920,631	$ (59,932)
2	Workers Compensation	$ 1,093,460	$ 1,076,997	$ (16,463)
3	Vehicle	$ 236,021	$ 232,468	$ (3,554)
4	Other (Exec Risk, Property, Surety Bond)	$ 1,467,232	$ 1,445,141	$ (22,091)
5	Total Insurance Expense for Water Operations	$ 6,777,277	$ 6,675,237	$ (102,040)
6	Captalization Rate	30%	30%	
7	Capitalized portion not charged to operating expense	$ (2,033,183)	$ (2,002,571)	$ 30,612
8	O&M Insurance Expense for Water Operations	$ 4,744,094	$ 4,672,666	$ (71,428)
	Wastewater Operations			
	General Liability	$ 47,069	$ 46,361	$ (709)
9	Workers Compensation	$ 4,380	$ 4,314	$ (66)
10	Other (Exec Risk, Property, Surety Bond)	$ 15,901	$ 15,662	$ (239)
11	Total Insurance Expense for Wastewater Operations	$ 67,350	$ 66,336	$ (1,014)
12	Captalization Rate	30%	30%	
13	Capitalized portion not charged to operating expense	$ (20,205)	$ (19,901)	$ 304
14	O&M Insurance Expense for Wastewater Operations	$ 47,145	$ 46,435	$ (710)

Notes and Source

Col. A, lines 1-8: Amounts from Exhibit 1-A, Schedule C-4.6 from Aqua's filing
Col. A, lines 9-14: Amounts from Exhibit 1-B Wastewater Base, Schedule C-4.6 from Aqua's filing
Col. B: OCA amounts based on a 3-year average of actual insurance expense charged to Aqua per the response to I&E-RE-40-D and calculated below:

	Description	FY 2018	FY 2019	FY 2020	FY 2021	3-Year Average
15	O&M Insurance	$ 5,722,844	$ 5,411,350	$ 5,793,145	$ 6,460,812	
16	Year-Over-Year Increase/(Decrease)		$ (311,494)	$ 381,795	$ 667,667	
17	Year-Over-Year Percentage Increase/(Decrease)		-5.44%	7.06%	11.53%	4.38%

	Water Operations	FTY Amount Per Company*	3-Year Average Increase	FPFTY Insurance Expense
18	General Liability	$ 3,756,142	4.38%	$ 3,920,631
19	Workers Compensation	$ 1,031,812	4.38%	$ 1,076,997
20	Vehicle	$ 222,715	4.38%	$ 232,468
21	Other (Exec Risk, Property, Surety Bond)	$ 1,384,511	4.38%	$ 1,445,141
22	Total Insurance Expense for Water Operations	$ 6,395,180		$ 6,675,237
	Wastewater Operations			
23	General Liability	$ 44,416	4.38%	$ 46,361
24	Workers Compensation	$ 4,133	4.38%	$ 4,314
25	Other (Exec Risk, Property, Surety Bond)	$ 15,004	4.38%	$ 15,662
26	Total Insurance Expense for Wastewater Operations	$ 63,553		$ 66,336

* Company FTY amounts from Schedule C-4.6 from Aqua's water and wastewater base filings

Aqua Pennsylvania, Inc.
Rate Case Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water and Wastewater Operations
Schedule C-16
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Allocation Factor (A)	Per Company (B)	Per OCA (C)	OCA Adjustment (D) = (C) -(B)
1	Engineering, Cost Allocation and Depreciation		$ 400,000	$ 400,000	$ -
2	Legal		$ 1,200,000	$ 1,200,000	$ -
3	Other Consultants		$ 100,000	$ -	$ (100,000)
4	Rate of Return		$ 95,000	$ 95,000	$ -
5	Notices and Postage		$ 340,000	$ 340,000	$ -
6	Miscellaneous		$ 65,000	$ -	$ (65,000)
7	Total		$ 2,200,000	$ 2,035,000	$ (165,000)
	Allocation of Total Rate Case Expense				
8	Water	91.51%	$ 2,013,220	$ 1,862,229	$ (150,992)
9	Wastewater	8.49%	$ 186,780	$ 172,772	$ (14,009)
10	Normalization Period		3 Years	3.3 Years	
	Annual Amortization:				
11	Water Operations		$ 671,073	$ 564,312	$ (106,762)
12	Wastewater Operations		$ 62,260	$ 52,355	$ (9,905)

Notes and Source:
Col. A: Exhibit 1-A, Schedule C-4.4 from the Company's filing
Col. B: Company response to OCA-IV-23

Aqua Pennsylvania, Inc.
Non-Rate Case Legal Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water Operations
Schedule C-17
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Aqua Present Rates 3/31/2023 Amount (A)	OCA Proposed (B)	OCA Adjustment (C)
1	Legal Expense Claim	$ 644,475	$ 619,494	$ (24,981)

Notes and Source:
Col. A: Aqua Exhibit 1-A, Schedule C-9.1, Account 6338
Col. B: See page 2 of this schedule

Aqua Pennsylvania, Inc.
Non-Rate Case Legal Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Water Operations
Schedule C-17
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 2

Line No.	2019	Month	Month Total	2020	Month	Month Total
1		January	$ 92,259		January	$ 23,273
2		February	$ 1,243		February	$ 149,454
3		March	$ 143,401		March	$ 110,599
4		April	$ 8,956		April	$ 3,584
5		May	$ 12,915		May	$ 29,890
6		June	$ 21,386		June	$ 57,970
7		July	$ 46,743		July	$ 13,384
8		August	$ 3,877		August	$ 52,183
9		September	$ 20,729		September	$ 1,698
10		October	$ 102,560		October	$ 30,566
11		November	$ (41,042)		November	$ 39,849
12		December	$ 132,523		December	$ 75,293
13		Total 2019	$ 545,550		Total 2020	$ 587,742
14				Two Year Average		$ 566,646

	April 2019-March 2020		April 2020-March 2021		
	Month	Month Total	Month	Month Total
15	April	$ 8,956	April	$ 3,584
16	May	$ 12,915	May	$ 29,890
17	June	$ 21,386	June	$ 57,970
18	July	$ 46,743	July	$ 13,384
19	August	$ 3,877	August	$ 52,183
20	September	$ 20,729	September	$ 1,698
21	October	$ 102,560	October	$ 30,566
22	November	$ (41,042)	November	$ 39,849
23	December	$ 132,523	December	$ 75,293
24	January	$ 23,273	January	$ 55,292
25	February	$ 149,454	February	$ 34,990
26	March	$ 110,599	March	$ 252,318
27	Total	$ 591,973	Total	$ 647,015
28			Two Year Average	$ 619,494

Notes and Source:

Company response to OCA-IV-26
Per the Company's response to OCA-IV-25, Aqua records all non-rate case legal expense in account 633800 for water operations

Aqua Pennsylvania, Inc.
Supplemental Executive Retirement Program (SERP)

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-2
Schedule C-18
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Account Number	Water Amount	Wastewater Amount	Total	Reference
		(A)	(B)	(C)	(D)	
1	WT-A&G Empl Benefits - Nonqual Service Costs	604/704	$ (97,014)	$ -	$ (97,014)	A
2	Management Fee - (Non Qual Plan/SERP)	634/734	$ (598,598)	$ (57,050)	$ (655,648)	A
3	Total SERP Expense		$ (695,612)	$ (57,050)	$ (752,662)	

Notes and Source

A: Amounts from the supplemental response to OCA-VII-46

Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc.
Docket Nos. R-2021-3027385 (Water) and R-2021-3027386 (Wastewater)
Exhibit LA-3
Copies of Non-Confidential Material Referenced in the
Direct Testimony of
Ralph C. Smith

Document	Subject	Confidential	No. of Pages	Page No.
OCA-VII-11	Monthly Levels of Contributions in Aid of Construction	No	2	2 - 3
OCA-VII-12	Monthly Levels of Customer Advances	No	2	4 - 5
OCA-VII-14	Customer Advances	No	1	6
OCA-VII-18	Monthly Levels of Deferred Debits	No	2	7 - 8
OCA-VII-19	Deferred Debits	No	1	9
I&E-RE-10-D	Rate Case Expense	No	1	10
OCA-X-27	Repair Deductions	No	2	11 - 12
OCA-X-28	Limerick Utility Repair Deductions	No	1	13
OCA-IV-18	Water Utility Usage related to COVID-19	No	1	14
OCA-IV-14	Declining Customer Usage	No	1	15
OCA-IV-17	Declining Customer Usage Impacts	No	1	16
I&E-RE-33-D	Advertising Expense	No	13	17 - 29
I&E-RE-16-D Response	Non-Union Payroll Increase Assumptions - Highly Confidential Attachment not attached	No	1	30
OCA-XIII-8	Vacancy Rate used in Labor Costs	No	1	31
I&E-RE-22-D	Company's Actual Experience with Vacancies	No	1	32
I&E-RE-19-D	Payroll Detail - Pay Increases	No	1	33
I&E-RE-97-D	Number of Employees	No	2	34 - 35
I&E-RE-64-D	Incentive Compensation and Stock-Based Compensation	No	1	36
OCA-IV-5 Response	Incentive Compensation Plans Effective 2020-2023 - Highly Confidential Attachements in Exhibit LA-4	No	1	37
I&E-RE-40-D	Insurance Expense	No	2	38 - 39
OCA-IV-23	Rate Case Expense	No	1	40
I&E-RE-9-D	Rate Case Expense Related to Last Three Rate Cases	No	2	41 - 42
I&E-RE-12-D	Rate Case Expense Projections	No	1	43
OCA-IV-16	Legal and Consulting Expense	No	1	44
OCA-IV-25	Non-Rate Case Legal Expense Requested by Aqua	No	1	45
OCA-IV-26	Non-Rate Case Legal Expense Recorded in 2019, 2020, and 2021	No	3	46 - 48
I&E-RE-55-D	Legal Expense Detail	No	1	49
OCA-VII-30	Expense Reductions Resulting from COVID-19 Pandemic	No	1	50
OCA-VII-31	Revisions to Operating Budget due to COVID-19 Pandemic	No	1	51
OCA-VII-32	Future Impacts from the COVID-19 Pandemic	No	1	52
OCA-VII-33	Revisions to Capital Expenditures Budget due to COVID-19 Pandemic	No	1	53
OCA-VII-42	Interest Cost Deferrals in 2020 and 2021	No	1	54
OCA-X-7	Accumulated COVID-19 Deferred Regulatory Asset for Uncollectibles	No	1	55
OCA-X-8	COVID-19 Deferred Regulatory Asset for Uncollectibles in Last Rate Case	No	1	56
OCA-X-9	Offset to Accumulated COVID-19 Deferred Regulatory Asset for Uncollectibles	No	1	57
OCA-XIII-6	November 2020 COVID-19 Pandemic Bonuses	No	2	58 - 59
OCA-XIII-7	April 3, 2020 Credit Agreement	No	1	60
OCA-VII-46	SERP Expense Requested by Aqua	No	1	61
OCA-VII-46 Supplemental Response	SERP Expense Requested by Aqua - Highly Confidential Attachments in Exhibit LA-4	No	2	62 - 63
I&E-RE-24-D	Incentive Compensation and Bonus Plans	No	2	64 - 65
	Total Pages Including this Page		65	

Witness: Erin M. Feeney
Date: 10/18/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-11: Please provide the monthly level of Contributions in Aid of Construction for 2018, 2019, 2020, for each month in 2021 actual and as projected by month, and for each month through March 2023 as projected.

RESPONSE:

Regarding the monthly balances for January 31, 2018 through September 30, 2021 refer to the tables below: Table 1: Water and Table 2: Wastewater.

Regarding the balances for the future test year and fully projected future test year, please refer to Schedule G-6 of Exhibit 1-A for water and Schedule G-6 of Exhibits 1-B through 1-G for wastewater.

Table 1:
Water

	2018	2019	2020	2021
January	$(128,141,001)	$ (132,293,461)	$ (133,810,595)	$ (135,999,052)
February	$(127,966,869)	$ (132,285,780)	$ (133,999,795)	$ (135,860,462)
March	$(128,263,377)	$ (132,114,452)	$ (133,892,373)	$ (135,594,031)
April	$(128,083,250)	$ (128,865,770)	$ (133,734,187)	$ (135,409,633)
May	$(127,948,623)	$ (128,572,653)	$ (133,472,624)	$ (135,138,500)
June	$(127,768,497)	$ (129,129,698)	$ (133,312,957)	$ (134,870,545)
July	$(127,624,986)	$ (128,880,513)	$ (133,080,452)	$ (134,856,007)
August	$(127,672,362)	$ (128,602,554)	$ (132,825,398)	$ (134,382,978)
September	$(127,495,552)	$ (128,399,877)	$ (133,834,392)	$ (134,111,487)
October	$(127,315,365)	$ (128,158,045)	$ (133,504,021)	
November	$(127,153,620)	$ (127,902,983)	$ (133,238,193)	
December	$(127,097,101)	$ (133,971,941)	$ (136,266,615)	

Table 2:
Wastewater

	2018	2019	2020	2021
January	$ (16,817,884)	$ (20,319,917)	$ (19,817,078)	$ (20,086,811)
February	$ (16,782,018)	$ (20,275,383)	$ (19,775,322)	$ (20,049,684)
March	$ (20,636,488)	$ (20,230,849)	$ (19,733,566)	$ (20,202,852)
April	$ (20,590,889)	$ (20,198,807)	$ (20,156,236)	$ (20,180,489)
May	$ (20,545,291)	$ (20,154,027)	$ (20,151,331)	$ (20,140,313)
June	$ (20,499,693)	$ (20,109,370)	$ (20,107,697)	$ (20,096,440)
July	$ (20,454,633)	$ (20,067,614)	$ (20,068,002)	$ (20,072,250)
August	$ (20,410,097)	$ (20,025,858)	$ (20,031,564)	$ (20,038,092)
September	$ (24,906,827)	$ (19,984,102)	$ (19,987,921)	$ (20,001,278)
October	$ (24,862,291)	$ (19,942,346)	$ (19,943,817)	
November	$ (24,817,755)	$ (19,900,590)	$ (19,899,713)	
December	$ (20,231,953)	$ (19,858,834)	$ (19,855,609)	

Witness: Erin M. Feeney
Date: 10/18/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-12: Please provide the monthly level of Customer Advances for 2018, 2019, 2020, for each month in 2021 actual and as projected by month, and for each month through March 2023 as projected.

RESPONSE:

Regarding the monthly balances for January 31, 2018 through September 30, 2021 refer to the tables below: Table 1: Water and Table 2: Wastewater.

Regarding the balances for the future test year and fully projected future test year, please refer to Schedule G-6 of Exhibit 1-A for water and Schedule G-6 of Exhibits 1-B through 1-G for wastewater.

Table 1:
Water

	2018	2019	2020	2021
January	$ (50,920,655)	$ (50,618,634)	$ (49,671,684)	$ (52,555,912)
February	$ (52,619,333)	$ (51,002,937)	$ (49,680,797)	$ (53,054,600)
March	$ (52,777,821)	$ (53,058,110)	$ (51,482,741)	$ (55,266,575)
April	$ (53,327,862)	$ (52,975,480)	$ (51,353,148)	$ (55,416,692)
May	$ (53,633,002)	$ (53,062,737)	$ (51,275,817)	$ (55,735,639)
June	$ (56,173,009)	$ (54,355,510)	$ (52,685,999)	$ (59,278,088)
July	$ (56,181,586)	$ (54,553,138)	$ (52,787,932)	$ (59,282,336)
August	$ (56,003,706)	$ (54,570,688)	$ (52,809,151)	$ (60,260,917)
September	$ (56,977,837)	$ (57,041,946)	$ (56,578,020)	$ (61,866,753)
October	$ (56,843,204)	$ (57,019,195)	$ (57,508,658)	
November	$ (57,364,314)	$ (57,347,061)	$ (57,545,614)	
December	$ (56,449,054)	$ (50,049,497)	$ (52,572,744)	

Table 2:
Wastewater

	2018	2019	2020	2021
January	$ (126,000)	$ (126,000)	$ (499,322)	$ (2,485,873)
February	$ (126,000)	$ (126,000)	$ (515,702)	$ (2,487,944)
March	$ (126,000)	$ (499,322)	$ (1,088,404)	$ (2,987,722)
April	$ (126,000)	$ (499,322)	$ (715,082)	$ (3,482,082)
May	$ (126,000)	$ (499,322)	$ (715,082)	$ (3,482,082)
June	$ (126,000)	$ (499,322)	$ (715,082)	$ (3,482,082)
July	$ (126,000)	$ (499,322)	$ (715,082)	$ (3,482,082)
August	$ (126,000)	$ (499,322)	$ (770,789)	$ (3,476,514)
September	$ (126,000)	$ (499,322)	$ (2,356,615)	$ (3,834,062)
October	$ (126,000)	$ (499,322)	$ (2,356,615)	
November	$ (126,000)	$ (499,322)	$ (2,456,260)	
December	$ (126,000)	$ (499,322)	$ (2,485,873)	

Witness: Erin M. Feeney
Date: 10/18/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-14: Customer Advances.

a. What is the ratemaking treatment for customer advances proposed by the Company in its filing? Where is such proposal found in the filing?

b. Provide the actual monthly amounts of customer advances by account for the period December 2018 through 2021 to date, and as projected through March 2023.

c. Provide the monthly interest expense paid and interest rate applied by the Company on customer advances for each period.

RESPONSE:

a. As noted in the Company's response to the filing requirement E. Rate Base – RB16, the Company's claim does not include any projects to be funded by customer advances for construction. Any increase in CAC would trigger a corresponding and offsetting adjustment in plant in service, hence the effect on the Company's claimed rate base is zero. Please refer to Schedules G-1 and G-6 of Exhibit 1-A for water and Schedules G-1 and G-6 of Exhibit 1-B for wastewater.

b. Please refer to the Company's response to OCA-VII-9, part g & OCA-VII-12 for the actual monthly amounts of customer advances by account for the period December 2018 through September 2021. The Company has not projected any Customer Advances through March 2023.

c. The Company does not pay monthly interest expense on customer advances.

Witness: William C. Packer
Date: 10/18/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-18: Please provide the actual monthly amount of Deferred Debits by component for January 1, 2019 through 2021 to date, for each month in 2021, and as projected by month through March 2023.

RESPONSE:

Please refer to the below table of Deferred Debits. Only amounts related to Deferred Rate Case Expense, FAS109/AFUDC, FAS143 – Net Salvage Amortization, and EXCESS Funding Deficit (FAS106) are included as a component of cost of service in the instant proceeding and are not projected on a monthly basis. Please refer to Exhibits 1-A (Rate Case, FAS106, FAS109) and Exhibits 6-A through 6-G (FAS143 – Net Salvage) projected amounts through March 2023. Both deferred Rate Case Expense and Excess Funding Deficit are amortized over 3 years, consistent with prior regulatory approvals. Amounts amortized for FAS109 (included in ADIT) are reversed over the life of the underlying deferred tax liabilities.

OCA-VII-18 Table 1:

YEAR	ACCOUNT	ACCOUNT DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December
2019	186101	Deferred Rate Case Exp-1	963,523	1,150,571	1,311,985	1,456,255	1,456,255	1,455,723	1,418,584	1,376,992	1,335,400	1,293,808	1,252,216	1,210,624
	186210	Other Deferred DB-SUSP-AMORTIZ	323,010	323,010	323,010	323,010	323,010	323,010	323,010	317,008	323,010	323,010	323,010	(176,990)
	186270	Other Deferred DB-SERVICE LINE	29,819	29,595	29,291	29,216	29,216	29,100	29,016	28,477	27,367	14,142	22,405	22,398
	186325	Reg Asset-EXC FUND/DEF-OPEB	(176,986)	(176,986)	(251,018)	(251,018)	(251,018)	(319,423)	(314,748)	(310,073)	(234,511)	(371,610)	(366,935)	(433,136)
	186330	Reg Asset-TAXES(FAS 109)	638,500,053	638,500,053	652,923,331	652,923,331	652,923,331	672,045,775	672,045,775	672,045,775	695,470,316	695,470,316	695,470,316	714,376,165
	186355	Reg Asset-AFUDC Gross Up (WIP)	2,425,317	2,648,407	2,822,817	2,405,162	2,529,017	2,637,650	2,644,249	2,823,052	3,032,962	2,525,561	2,738,141	2,923,154
	186366	Reg Asset-AFUDC Gross Up (InSvc)	8,912,828	8,912,828	8,912,828	9,484,976	9,484,976	9,484,976	9,673,559	9,673,559	9,673,559	10,378,179	10,378,179	10,378,179
	186367	Reg Asset-AFUDC Gross Up (AD)	(335,602)	(351,899)	(368,197)	(383,986)	(400,788)	(417,590)	(434,629)	(452,007)	(469,385)	(486,874)	(505,637)	(524,399)
	186380	Reg Asset-PENSION/SERP AML	37,909	37,909	80,640	80,640	80,640	123,370	123,370	123,370	165,253	165,253	165,253	207,701
	186381	Reg Asset-Vacation Balancing Account	314,908	314,908	344,908	344,908	344,908	374,908	374,908	374,908	354,908	354,908	354,908	319,331
	186399	Reg Asset-OTHER	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)
	186400	Reg Asset-FAS143	6,699,175	6,814,537	6,861,408	6,893,103	6,802,537	6,850,473	6,698,012	7,376,814	7,471,200	7,727,042	7,784,786	7,872,770
2020	186101	Deferred Rate Case Exp-1	1,169,031	1,127,439	1,085,847	1,044,255	1,002,663	961,071	919,479	877,887	836,295	794,703	761,876	746,842
	186210	Other Deferred DB-SUSP-AMORTIZ	(176,990)	(176,990)	(176,990)	(176,990)	(176,990)	78,804	(32,168)	(85,225)	101,873	(176,990)	(176,990)	(167,385)
	186270	Other Deferred DB-SERVICE LINE	22,225	22,168	22,168	22,168	22,168	5,662	22,168	22,168	22,168	21,705	21,413	11,807
	186325	Reg Asset-EXC FUND/DEF-OPEB	(428,461)	(423,786)	(490,257)	(485,582)	(480,907)	(779,160)	(774,485)	(769,810)	(910,096)	(905,421)	(900,746)	(1,069,083)
	186330	Reg Asset-TAXES(FAS 109)	714,376,165	714,376,165	726,064,501	726,064,501	726,064,501	739,006,653	739,006,653	739,006,653	754,268,085	754,268,085	754,268,085	769,670,590
	186355	Reg Asset-AFUDC Gross Up (WIP)	2,759,642	2,885,815	2,987,584	2,475,746	2,507,611	2,613,492	2,037,196	2,168,800	2,276,736	2,353,204	2,468,395	2,603,066
	186366	Reg Asset-AFUDC Gross Up (InSvc)	10,663,883	10,663,883	10,663,883	11,218,604	11,218,604	11,218,604	11,922,936	11,922,936	11,922,936	11,970,074	11,970,074	11,970,074
	186367	Reg Asset-AFUDC Gross Up (AD)	(543,236)	(562,591)	(581,947)	(600,513)	(620,045)	(639,577)	(659,396)	(680,459)	(701,521)	(722,863)	(744,290)	(765,716)
	186380	Reg Asset-PENSION/SERP AML	207,701	207,701	264,751	264,751	264,751	321,801	321,801	321,801	378,851	378,851	378,851	435,901
	186381	Reg Asset-Vacation Balancing Account	319,331	319,331	349,331	349,331	349,331	399,331	399,331	399,331	449,331	449,331	449,331	456,507
	186399	Reg Asset-OTHER	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)
	186400	Reg Asset-FAS143	8,018,327	8,361,517	8,850,867	8,689,610	9,153,372	9,020,686	8,970,672	8,832,382	8,684,514	9,392,500	9,405,824	9,379,888
	186520	Reg Asset-COVID19 Recovery Costs	-	-	-	-	-	734,318	734,318	734,318	3,136,226	3,136,226	3,136,226	4,726,646
2021	186101	Deferred Rate Case Exp-1	719,238	703,196	679,847	641,867	616,094	590,637	576,857	725,154	921,742			
	186210	Other Deferred DB-SUSP-AMORTIZ	(176,990)	(176,990)	(176,990)	65,086	(176,990)	(176,990)	(176,990)	(167,201)	(176,990)			
	186270	Other Deferred DB-SERVICE LINE	21,121	21,121	20,535	20,535	20,535	20,535	20,535	20,535	20,535			
	186325	Reg Asset-EXC FUND/DEF-OPEB	(1,064,408)	(1,059,733)	(1,057,232)	(1,422,235)	(1,417,560)	(1,784,738)	(1,780,063)	(1,775,388)	(2,142,566)			
	186330	Reg Asset-TAXES(FAS 109)	769,670,590	769,670,590	781,373,914	781,373,914	781,373,914	795,965,983	795,965,983	795,965,983	810,589,727			
	186355	Reg Asset-AFUDC Gross Up (WIP)	2,478,455	2,583,013	2,687,926	2,448,553	2,581,900	2,768,168	2,680,137	2,853,267	3,087,053			
	186366	Reg Asset-AFUDC Gross Up (InSvc)	12,211,701	12,211,701	12,211,701	12,564,364	12,564,364	12,564,364	12,832,133	12,832,133	12,832,133			
	186367	Reg Asset-AFUDC Gross Up (AD)	(787,270)	(809,259)	(831,248)	(852,621)	(874,612)	(896,602)	(918,832)	(941,535)	(964,238)			
	186380	Reg Asset-PENSION/SERP AML	435,901	435,901	497,948	497,948	497,948	559,995	559,995	559,995	559,995			
	186381	Reg Asset-Vacation Balancing Account	456,507	456,507	396,507	396,507	396,507	336,507	336,507	336,507	276,507			
	186399	Reg Asset-OTHER	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	(19,102)	345,898			
	186400	Reg Asset-FAS143	9,317,709	9,623,360	9,429,495	9,272,781	9,139,187	9,356,196	9,427,354	9,527,471	9,707,688			
	186520	Reg Asset-COVID19 Recovery Costs	4,726,646	4,726,646	5,695,030	5,695,030	5,695,030	5,188,024	5,188,024	5,188,024	4,587,428			
	186530	Reg Asset-Twin Lakes	-	-	-	3,340	7,515	7,515	7,515	7,515	7,515			

Witness: William C. Packer
Date: 10/18/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-19: Please, identify and explain each item of Deferred Debits, when it first arose, when amortization commenced, when amortization will be completed, why the cost was deferred, and Commission authorization for each Deferred Debit item that is being requested for inclusion in rate base.

RESPONSE:

Please see the Company's response to OCA-VII-18.

Witness: Christopher E. Manning
Date: 10/1/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-10-D: Reference AP Exhibits 1-A through 1-G, Schedule C-4.4 concerning rate case expense. Identify any amounts included in the current claim that relate to amortization and/or normalization of prior proceeding(s) rate case expense as:

A. Expense item;

B. Rate base item.

RESPONSE:

There are no amounts included in the current claim that relate to amortization and/or normalization of prior proceeding rate case expense items.

Witness: Christine Saball
Date: 11/8/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET X

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-X-27: Refer to Ms. Saball's direct testimony at page 5, lines 5-6.

a. Show in detail how the $163.5 million 2021 tax year repair deduction amount was derived.

b. What was Aqua PA's actual 2020 tax year repair deduction amount, as reflected on the as-filed 2020 income tax return?

c. What repair deduction amounts does Aqua PA project for the FTY and FPFTY? Show the amounts in total, show in detail how they were estimated/calculated. Also, show the amounts for in total and for each utility. Also, show the associated state and federal income tax expense impacts in total and for each utility.

RESPONSE:

a. Please see the below breakdown, in part b. Note, at the time of filing, the Company's estimate for 2021 was $163.5M, but has been updated to $167.3M, thus still offsetting the under the collar amount expected in the 2020 tax return.

b. Please see the below breakdown.

	2020 (TR)	2021	HTY	FTY	FPFTY
Category I Rule: Network (8" Rule)					
Category II Rule: Network (12" Rule)					
Subtotal - Network Items	110,767,948	119,692,400	115,511,727	119,000,000	119,000,000
Non-Network	7,330,283	14,500,000	7,572,525	9,000,000	9,000,000
Capitalized Main Breaks	4,161,811	4,900,000	4,299,345	4,000,000	4,000,000
Main Cleaning and Lining	-	-	-	-	-
Tank Painting	2,008,820	1,200,000	2,075,205	2,500,000	2,500,000
Services	21,056,957	21,600,000	21,752,819	20,000,000	20,000,000
Hydrants	4,347,302	3,600,000	4,490,966	4,500,000	4,500,000
Valves	781,980	1,400,000	807,822	1,000,000	1,000,000
Subtotal - Additional Items	39,687,154	47,200,000	40,998,682	41,000,000	41,000,000
Non-Eligible Categories					
Subtotal - Water	150,455,103	166,892,400	156,510,409	160,000,000	160,000,000
Sewer	5,705,893	5,500,000	4,870,211	4,500,000	4,500,000
Non-Eligible Categories					
Subtotal - Sewer	5,705,893	5,500,000	4,870,211	4,500,000	4,500,000
Grand Total - All Pennsylvania	156,160,996	172,392,400	161,380,620	164,500,000	164,500,000
AFUDC Removal	(1,031,229)	(1,135,312)	(1,083,270)	(1,400,000)	(1,400,000)
FIN48 Removal	(4,657,479)	(4,000,000)	(3,979,094)	(4,000,000)	(4,000,000)
Total Net Repair Deduction	150,472,288	167,257,088	156,318,256	159,100,000	159,100,000
To Exhibit F-2 (Line 7)	==========>		151,448,045	154,600,000	154,600,000

c. Please see part b.

Witness: Christine Saball
Date: 11/8/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET X

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-X-28: Refer to Ms. Saball's direct testimony at page 6, lines 3-10. Identify the repair deductions claimed by Aqua for the Limerick utility in each year of Aqua ownership.

RESPONSE: There have not been any repair deductions claimed by Aqua for the Limerick utility since acquisition.

Witness: C. Heppenstall
Date: 10/12/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-18: Has Aqua made any estimates of total usage, per-customer usage, or usage by class for its water utility related to COVID-19? If not, explain fully why not. If so, identify, quantify and explain the impacts on 2020, HTY 2021, FTY 2022, and the FPFTY ending March 2023.

RESPONSE:

See Schedule 6 in Exhibit 5-A, Part II for the Company's estimate of total usage impact by customer class due to COVID-19 by customer class, in the form of an adjustment.

The Company expects usage to return to normal levels by class post pandemic. Therefore, the Company adjusted usage to pre-pandemic levels based on the adjustment in Schedule 6. The Company has projected no other adjustments due to COVID-19 for the consumption of the Residential, Commercial, and Public classes in 2020, HTY 2021, FTY 2022 and FPFTY ended March 31, 2023.

Witness: Erin M. Feeney
Date: 10/12/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-14: Has Aqua reflected any reductions in revenue for declining customer usage for any customer accounts for which water utility service is based on usage? If so, please identify, quantify and explain the impact on 2020, HTY 2021, FTY 2022, and the FPFTY ending March 2023 revenue.

RESPONSE:

Aqua has not reflected any reductions in revenue for declining customer usage for any customer accounts for which water utility service is based on usage. Please refer to page 17 of AP Statement No.5, Constance E. Heppenstall's direct testimony.

Witness: Erin M. Feeney
Date: 10/12/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-17: Has Aqua reflected any impact of estimated declining customer usage for any of its water utility operations?

a) If not, explain fully why not.

b) If so, identify, quantify and explain the impact, and explain in detail where this is reflected in Aqua's application.

RESPONSE:

Aqua has not reflected any impact of estimated declining customer usage for any of its' water utility operations in this filing. Typically, the Company would reflect the impact of estimated declining customer usage in its' filing. However, due to the unusual effects of the COVID-19 pandemic, the Company has refrained from doing so.

Please refer to page 17 of AP Statement No.5, Constance E. Heppenstall's direct testimony.

Witness: William C. Packer
Date: 10/7/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-33-D: Reference Minimum Filing Requirements C. Operating Expenses, OE9 concerning expenditures for advertising:

A. Provide a breakdown of advertising expenses in each category for the FPFTY;

B. Indicate where advertising is in the FPFTY;

C. Provide samples of each type of advertising used by the Company.

RESPONSE: A. Please see the table below:

	HTY 3/31/2021	FTY 3/31/2022	FPFTY 3/31/2023
Water			
a. Public Health and Safety	$ 279,803	$ 284,701	$ 288,495
b. Conservation of Energy	-		
c. Explanation of biling practices, rates, rules and regulations	-		75,000
d. Provision of Factual and Objective Data Programs	-		
e. Other Advertising Programs	4,091	4,163	5,315
f. Total	**$ 283,894**	**$ 288,864**	**$ 368,810**
Wastewater			
a. Public Health and Safety	$ -	$ -	$ -
b. Conservation of Energy	-	-	-
c. Explanation of biling practices, rates, rules and regulations	-	-	7,500
d. Provision of Factual and Objective Data Programs	-	-	-
e. Other Advertising Programs	-	-	-
f. Total	**$ -**	**$ -**	**$ 7,500**

B. The amount for Water is included in the "Other" O&M Category in Exhibit 1-A. The amount for Wastewater is included in the "Other" O&M Category in Exhibit 1-B.

C. Aqua Pennsylvania employs several media tools to educate customers about optimizing water usage. These include, among others, the company's website, blog, bill inserts, and our social media channels: Facebook, Twitter, LinkedIn and YouTube.

For samples of customer education used by the Company, please see the attached (5) electronic and (1) PDF files:

I&E-RE-33 - Attachment 1 - Aqua_Know What You Own.mp3
I&E-RE-33 - Attachment 2 - Aqua_Sustainability.mp3
I&E-RE-33 - Attachment 3 - Aqua-Chris F.mp3
I&E-RE-33 - Attachment 4 - Aqua Plumber.mp4
I&E-RE-33 - Attachment 5 - Aqua Sustainability.mp4
I&E-RE-33 - Attachment 6 - Customer Ed Examples.pdf

Aqua Advertising Examples

Attached, please find examples of customer education information utilized by Aqua Pennsylvania through various means of communications

- Treasure Lake
- Clogs

Facebook

- Small Leaks
- Protect the Source
- WaterSmart Alerts
- SE Pennsylvania Hot Spot Program

Twitter

- Protecting and providing Earth's most essential resource
- College student assistance
- 811 digging call
- Infrastructure Week

Aqua Pennsylvania – Proudly Providing Water Service to Treasure Lake Since 2013.

Water system investments

- Improved quality and reliability
- New and upgraded storage tanks
- New sources and treatment facilities
- Replacement of aging water mains

Wastewater system investments

- Treatment plant and lift station upgrades
- Collection systems repairs to reduce wet weather flows

Aqua looks forward to continuing to improve its Treasure Lake operations and facilities for the benefit of the entire community many years into the future.

AquaAmerica.com /MyAquaAmerica @MyAquaAmerica

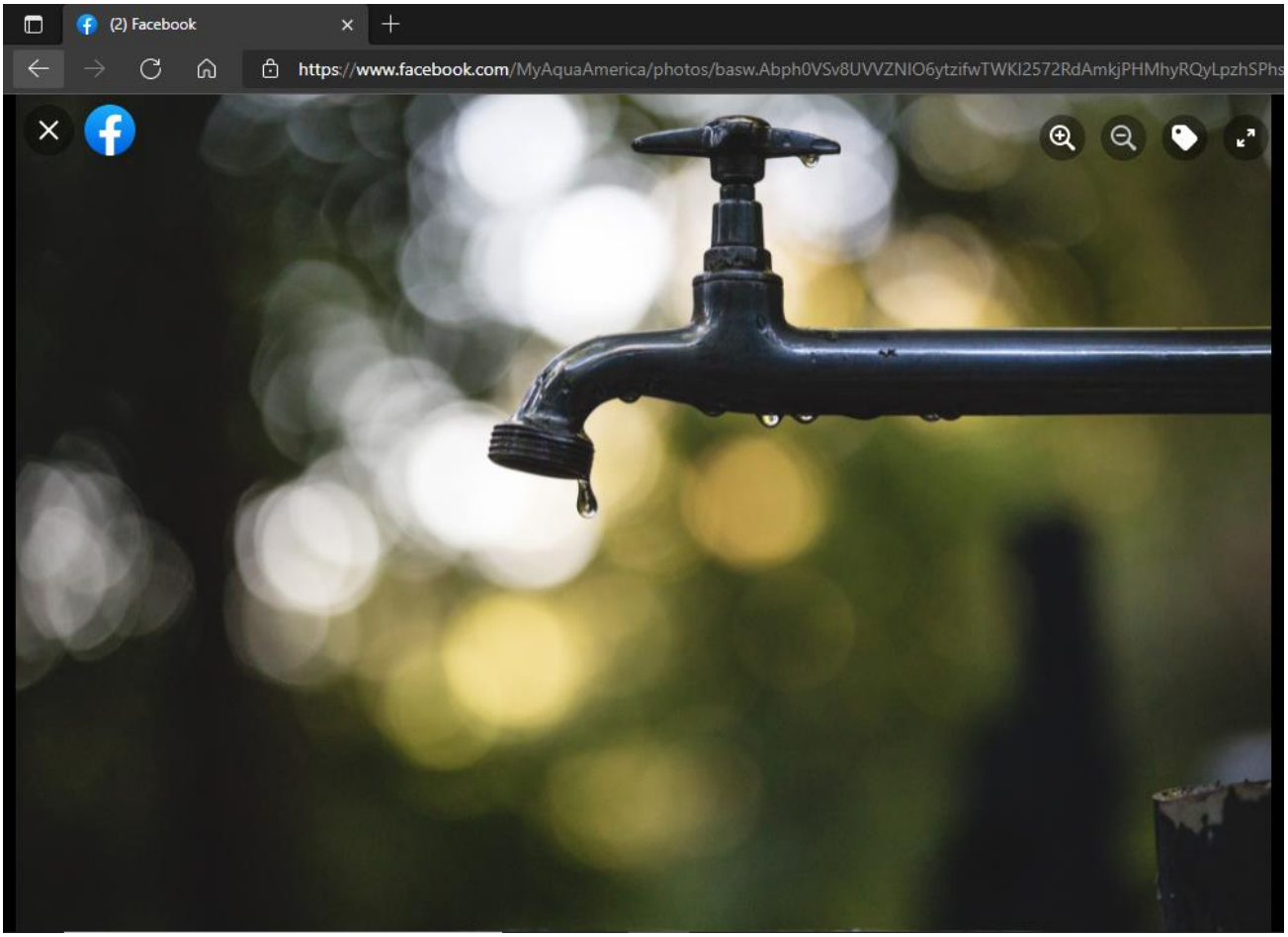
DO NOT Flush Wipes!

Prevent plumbing backups and wastewater overflows. Do not flush wipes! Put wipes in the trash. Even wipes labeled as flushable don't break down and can cause backups in household plumbing and larger blockages in wastewater collection systems. Do not flush tissues, napkins or paper towels.

AQUA SM

An Essential Utilities Company

/MyAquaAmerica @MyAquaAmerica AquaAmerica.com



Aqua
November 14, 2020 ·

Did you know small leaks add up to 1 trillion gallons of water wasted every year in America alone? Learn more on our blog: https://bit.ly/3lWs3yW

359 11 Comments 24 Shares

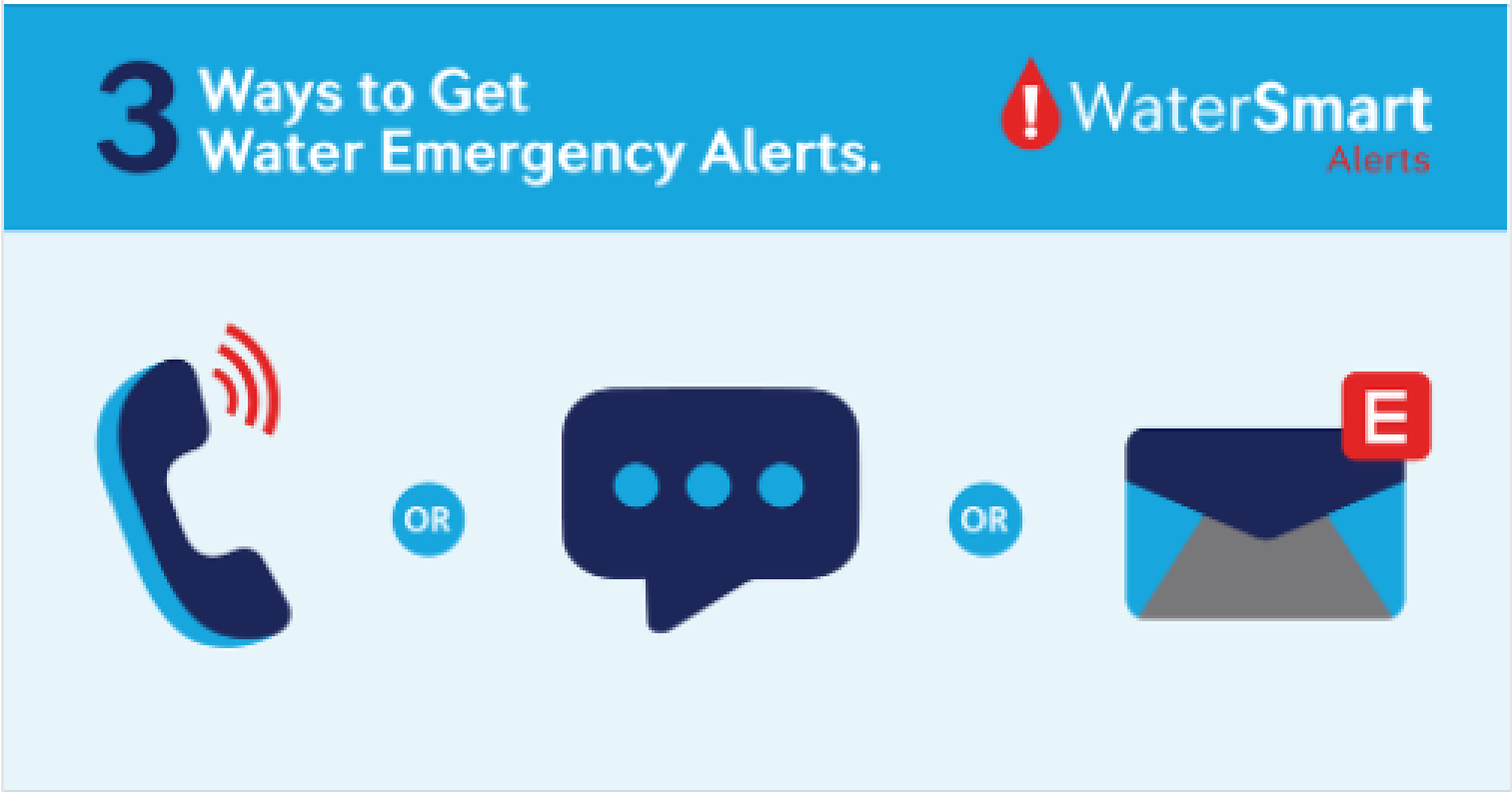
Like Comment Share

Aqua
13h ·

This week, we are celebrating Source Water Protection Week and shedding light on the importance of protecting sustainable sources of water that can be treated into reliable, high-quality drinking water. For more information please visit: https://bddy.me/3AQMbu0

Aqua
September 19 at 12:00 PM ·

If you receive WaterSmart alerts, you're already up-to-date on any unexpected interruptions to your water service. If you're not signed up, register today! https://bit.ly/33Vn23A



Aqua
August 27 ·

In honor of National Water Quality Month, take a moment to meet the experts of our Southeastern Pennsylvania Hot Spot Program, which promptly identifies and addresses water quality issues:
https://bit.ly/3kV9KwF

15 1 Share

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https://twitter.com/MyAquaAmerica

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Aqua
6,263 Tweets

An Essential Utilities Company

Protecting and providing
Earth's most essential resource.

AQUA

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Aqua
@MyAquaAmerica

Aqua, an @EssentialWTRG company, is one of the largest US-based, publicly-traded water utilities. Our social sites aren't monitored 24/7, but we'll reply asap!

aquaamerica.com Joined June 2013

876 Following **6,158** Followers

Not followed by anyone you're following

Tweets | Tweets & replies | Media | Likes

Aqua
6,263 Tweets

Follow

1 1

Aqua @MyAquaAmerica · Aug 13

If you are a college student who needs help with rent or your utility bills due to a loss of income, you may qualify for the PA Emergency Rental Assistance Program (ERAP).

To find out if you qualify, please visit bddy.me/2XgYSiM

Aqua @MyAquaAmerica · Aug 11

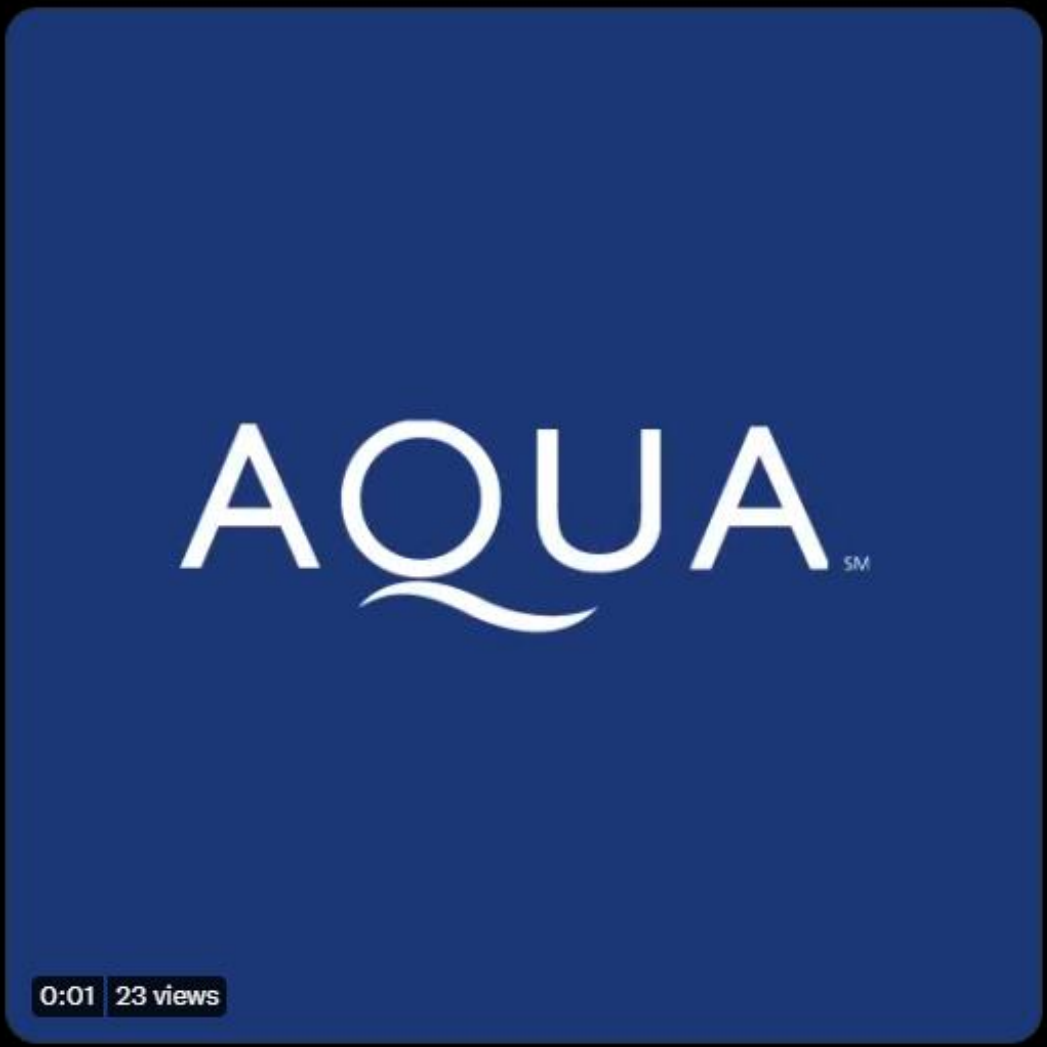
As an Essential Utilities company, Aqua is here to remind you on this 8/11 to always call 811 at least three business days before digging! Doing so will help keep your family and neighbors safe! Learn more: bddy.me/3saFgYV

1

Aqua @MyAquaAmerica · May 10

Part of our commitment to providing safe and reliable #water to our communities is making sure wastewater is taken care of properly.

In honor of #InfrastructureWeek, we're taking a deeper look at Aqua's wastewater operations. ➡️ bit.ly/3tGcP5f



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Witness: Erin M. Feeney
Date: 10/14/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-16-D: Reference AP Exhibit 2 concerning Non-Union Payroll increase assumptions. Provide the following:

A. Documentation for all non-union employee wage increases on Schedule 4;

B. Detailed supporting calculations (in live MS Excel format with formulas intact) for the non-union annualized compensation for the FTY on Schedule 2;

C. Detailed supporting calculations (in live MS Excel format with formulas intact) for the non-union annualized compensation for the FPFTY on Schedule 2; and

D. In the response to Parts B and C above, identify each type of compensation that is included in both the FTY and the FPFTY payroll. Include the percentage increase or amounts paid and effective dates or pay dates for each type of compensation.

RESPONSE:

A. Please refer to the highly confidential attachment "Highly Confidential I&E-RE-16 - Attachment 1".

B. & C. Please refer to the highly confidential electronic file "Highly Confidential I&E-RE-16 - Attachment 2 - Exhibit 2.xlsx".

D. The types of compensation included in Schedule 2 of Exhibit 2 include base salary or hourly wage. Additionally, compensation for overtime and bonus (STI/Achievement Award) for those employees that are eligible is included. These components are listed separately in the electronic file provided in response to parts B. & C. above.

Witness: Erin M. Feeney
Date: 11/8/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XIII-8: What vacancy rate was used by the Company in projecting labor costs for the FTY and FPFTY? Show in detail how that vacancy rate was determined.

RESPONSE:

The Company used a vacancy rate of 2.5% which was applied to the total regular time payroll projected in the FTY & FPFTY for full time employees. This is the rate the Company utilizes in creating its operating budget.

Witness: Erin M. Feeney
Date: 10/14/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-22-D: Reference AP Statement No. 2, p. 11, lines 12-13 concerning the vacancy adjustment. Provide a breakdown of the Company's actual experience with vacancies. Include headcount, percentages, and turnover.

RESPONSE:

Regarding headcount, please refer to the Company's response to I&E-RE-20.

The average number of days positions were open in 2019 was 69. In 2020, the average number of days positions were open was 60. In the HTY, the average number of days positions were open was 57.

Regarding the vacancy rate for the HTY, refer to the table below:

Authorized Regular Hours*		1,208,480				
Actual Regular Hours*	-	1,173,669				
	=	34,811	2.88%	Vacancy Rate		
*Union Full-Time, Regular Full-Time Only. Excludes Regular Part-Time, Co-Op, and Seasonal.						

Regarding historical turnover percentages, refer to the table below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2019	1.60	0.36	0.18	0.54	1.61	1.61	0.36	0.89	0.53	0.17	0.17	0.17	8.19
2020	0.18	0.88	1.05	0.35	0.35	1.57	0.89	1.24	1.07	0.53	0.35	0.71	9.17
2021	1.43	0.89	0.89	0.54	0.54	2.15							6.45

Witness: Erin M. Feeney
Date: 10/14/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-19-D: Reference AP Exhibit 2, Schedule 2 concerning payroll detail. Explain any increases not related to pay increases in the FTY in column 3 (i.e., lines 247-312).

RESPONSE:

The amounts in lines 247 through 277 represent positions that were vacant and new positions that the company is currently hiring for as of 3/31/21, the end of the HTY. Of these positions, 19 were vacant positions and 12 were new positions. Of the 19 vacant positions, 10 positions have been filled and 9 positions are still currently in the hiring process. Of the 12 new positions, 2 of the positions have been filled and 10 positions are still currently in the hiring process.

The amounts in lines 278 through 310 represent the seasonal employee positions for the FTY. These seasonal positions were vacant as of 3/31/21, the end of the HTY, because the seasonal employment period runs from mid-May through mid-September. The amounts in lines 311 and 312 represent positions that have been moved from the Company to Service Company during the HTY.

Witness: Erin M. Feeney
Date: 11/4/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-97-D: Reference the Company's response to I&E-RE-20-D concerning the number of employees:

A. Update of the Table in Part A with monthly data beyond the HTY ended 3/31/21 up to the most recent available month, providing the number of actual employees by month broken down by union and non-union.

B. Update of the Table in Part B with monthly data beyond the HTY ended 3/31/21 up to the most recent available month, providing the number of authorized employees by month broken down by union and non-union.

C. Specifically identify any budgeted FTY and/or FPFTY headcount amounts by year included in response to I&E-RE-20-D, Parts C and D, that are the result of any upcoming acquisitions, identify the utility to be acquired and the planned acquisition date.

RESPONSE:

A. Refer to I&E-RE-97 - Attachment 1.

B. Refer to I&E-RE-97 - Attachment 1.

C. There are no positions included in the Company's headcount or labor claim for positions related to upcoming acquisitions.

Actual

	3/31/2019	6/30/2019	9/30/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	3/31/2021	6/30/2021	9/30/2021	12/31/2021
Non-Union Full-Time	224	220	218	217	218	213	210	209	207	205	204	
Union Full-Time	339	340	337	354	351	359	351	357	352	352	350	
Total Full-Time	**563**	**560**	**555**	**571**	**569**	**572**	**561**	**566**	**559**	**557**	**554**	**0**
Regular Part-Time	6	6	5	5	5	5	5	5	5	5	5	
Co-Op	2	2	2	2	2	2	2	2	2	2	2	
Total Excluding Seasonal	**571**	**568**	**562**	**578**	**576**	**579**	**568**	**573**	**566**	**564**	**561**	**0**
Seasonal	0		0	0	0		0	0	0	11	0	0
Total	**571**	**568**	**562**	**578**	**576**	**579**	**568**	**573**	**566**	**575**	**561**	**0**

Authorized / Budgeted

	3/31/2019	6/30/2019	9/30/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	3/31/2021	6/30/2021	9/30/2021	12/31/2021
Non-Union Full-Time	226	226	226	226	218	220	220	220	224	224	224	224
Union Full-Time	343	343	343	349	361	361	361	361	361	361	361	361
Total Full-Time	**569**	**569**	**569**	**575**	**579**	**581**	**581**	**581**	**585**	**585**	**585**	**585**
Regular Part-Time	6	6	6	6	5	5	5	5	4	4	4	4
Co-Op	2	2	2	2	2	2	2	2	2	2	2	2
Total Excluding Seasonal	**577**	**577**	**577**	**583**	**586**	**588**	**588**	**588**	**591**	**591**	**591**	**591**
Seasonal		34				33				33		
Total	**577**	**611**	**577**	**583**	**586**	**621**	**588**	**588**	**591**	**624**	**591**	**591**

The Regular Part-Time, Seasonal and Co-op employees in the above table are non-union employees.
As noted in the Company's response to I&E-RE-18, seasonal positions are vacant as of March 31st of each year because the seasonal employment period runs from mid-May through mid-September.

Witness: William C. Packer
Date: 10/18/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-64-D: Identify and provide all quantifications detailing the amounts of incentive compensation and stock based compensation for Aqua directly incurred amounts and for amounts charged and also identify, quantify, explain and document how each incentive and stock based compensation program is providing a benefit to Aqua ratepayers. Provide this information for each year: 2018, 2019, and 2020 actual and as projected for each year 2021 and 2022, and the FTY ending 3/31/2022 and the Fully Projected Future Test Year ending 3/31/2023.

RESPONSE:

Please see the below table.

	FTY 03/31/2023	FTY 03/31/2022	HTY 3/31/2021	2020	2019	2018
WT-A & G Labor-Short Term Incentive - Cash	$2,589,864	$2,514,851	$2,296,209	$2,003,984	$1,417,743	$1,387,497
WT-A & G Labor-Stock Option Compensation	105,480	103,717	101,933	140,596	264,132	74,850
WT-A & G Performance Stock Compensation	458,994	451,321	443,559	358,358	400,663	713,891
WT-A & G Restricted Stock Compensation	282,019	277,305	272,536	265,432	191,616	115,487
Total Incentive Based Cash and Equity Compensation	**$3,436,357**	**$3,347,195**	**$3,114,237**	**$2,768,371**	**$2,274,154**	**$2,291,725**

Regarding the benefit of the programs to Aqua ratepayers, the Company's submits that its incentive plan structure has been reviewed several times in various rate cases and management audits over the past 30 years. In each instance, the Company's plans have been deemed to be appropriate and a reasonable form of compensation that conditions a portion of an employee's total compensation based on performance metrics, which include operations effectiveness and customer service. The Company's current performance metrics include not only financial weighting, but meaningful weighting on customer satisfaction, safety, and environmental compliance, all of which are consistent with past reviews of the Company's incentive compensation programs.

Witness: William C. Packer
Date: 10/14/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-5: Identify and provide a complete copy of each incentive compensation plan that was in effect for Aqua during 2020 and 2021 and which is to be in effect in 2022 and 2023.

RESPONSE:

Please see the attached plans [HIGHLY CONFIDENTIAL] Attachments 1 through 5. The are currently in effect and will remain in effect through 2023.

Witness: Christopher M. Henkel
Date: 10/1/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-40-D: Reference AP Exhibit 1-A, Schedule C-4.6 regarding insurance expense and Minimum Filing Requirements, C. Operating Expenses, OE23:

A. Provide a breakdown and supporting documentation for line 1, HTY general liability of $3,099,817 by providing a copy of an invoice, statement or letters from the insurance companies;

B. Provide a breakdown and supporting documentation for line 1, FTY general liability of $3,756,142 by providing a copy of an invoice, statement, or letters from the insurance companies;

C. Provide a breakdown and supporting documentation for line 1, FPFTY general liability of $3,980,563 by providing a copy of an invoice, statement, or letters from the insurance companies;

D. Provide the effective dates for all general liability rate changes:

E. Explain the 21.2% increase between the HTY and the FTY;

F. Explain the 6.0% increase between the FTY and the FPFTY.

RESPONSE:

Regarding Parts A. through C. above, please refer to the attachments provided in the Company's response to I&E-RE-39.

D. The effective dates for all rate changes are January 1st of each year.

E. The increase between the HTY and FTY is based on the Company's historical five-year claims experience and the required reserve percentages. Please see the response to I&E-RE-39, part A. The claims experience calculation is updated annually for each year and, accordingly, the required reserve changes are based on the Company's historical experience.

F. The Company's estimated increase between the FTY and FPFTY is 5.97% which is based on the five-year average of the increase to actual insurance expense charged to Aqua Pennsylvania, Inc. as follows:

	FY16	FY17	FY18	FY19	FY20	FY21	**Avg YOY % Increase**
OM Insurance	$ 4,885,260	$ 5,030,357	$ 5,722,844	$ 5,411,350	$ 5,793,145	$ 6,460,812	
YOY Increase/(Decrease) $		*$ 145,097*	*$ 692,487*	*$ (311,494)*	*$ 381,795*	*$ 667,667*	
YOY Increase/(Decrease) %		*2.97%*	*13.77%*	*-5.44%*	*7.06%*	*11.53%*	***5.97%***

Witness: Christopher E. Manning
Date: 10/12/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-23: Rate Case Expense:

a. Please break out the estimated rate case related legal fees by firm.

b. Please identify the amount of each type of rate case expense incurred through 2021 to date.

RESPONSE:

A. Please refer to the Company's response to I&E-RE-9.

B. Please see the table below which reflects the Company's most current summary of each type of rate case expense through Sep 30, 2021:

		Actual as of 9/30/2021
Engineering, Cost Allocation and Depreciation		$ 234,133
Legal		41,407
Other Consultants		-
Rate of Return		31,164
Notices and Postage		311,633
Miscellaneous		453
Total		$ 618,789

Witness: Christopher E. Manning
Date: 10/1/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-9-D: Reference AP Exhibits 1-A through 1-G, Schedule C-4.4 concerning rate case expense. Provide the following details for the last three base rate cases filed with the Commission:

A. Docket number and date of filing;

B. Indicate whether it was fully litigated or settled, and at what point in the proceeding a settlement occurred;

C. Effective date of the rate increase;

D. Dollar amount claimed for rate case expense, and the actual dollar amount incurred for each proceeding broken down by category similar to Schedule C-4.4, lines 1-7.

RESPONSE:

See attachment "I&E-RE-9 - Attachment 1" in response to parts A through D above.

I&E-RE-9 - Attachment 1

Rate Case Expense

	2018 Case Water	2011 Case Water	2009 Case Water
Docket Number	R-2018-3003558 / R-2018-3003561	R-2011-2267958	R-2009-2132019
Date of Filing	August 17, 2018	November 18, 2011	November 18, 2009
Result	Settled	Settled	Settled
Date Settlement sent to ALJ	February 9, 2019	April 20, 2012	March 31, 2010
Effective Date of Increase	May 24, 2019	June 8, 2012	June 17, 2010
Claimed			
Engineering, Cost Allocation and Depreciation	$ 190,000	$ 145,000	$ 145,000
Legal	1,200,000	525,000	450,000
Other Consultants	100,000	10,000	10,000
Rate of Return	90,000	52,000	52,000
Notices and Postage	330,000	218,000	208,000
Miscellaneous	65,000	65,000	65,000
Total	$ 1,975,000	$ 1,015,000	$ 930,000
Actual			
Engineering, Cost Allocation and Depreciation	$ 316,835	$ 133,456	$ 134,190
Legal	681,419	258,123	207,937
Other Consultants	77,906	-	4,468
Rate of Return	57,832	47,733	37,910
Notices and Postage	321,647	207,245	212,558
Miscellaneous	46,129	126,114	309,601
Total	$ 1,501,768	$ 772,671	$ 906,665

Witness: Christopher E. Manning
Date: 10/7/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-12-D: Reference AP Exhibits 1-A through 1-G, Schedule C-4.4 concerning the total rate case expense amount of $2,200,000. Provide the following:

A. Documentation of all fee arrangements for outside services, including but not limited to other consultants (line 3) and miscellaneous (line 6);

B. Invoices, to date, supporting the rate case expense claim, with monthly updates provided during the duration of this proceeding;

C. A summary of the projected rate case expense amounts by category:

1. If the case is settled prior to rebuttal testimony;

2. If the case is settled after rebuttal testimony but before hearings;

3. If the case is settled after hearings but before briefing.

RESPONSE:

A. Please see "Highly Confidential I&E-RE-12-Attachment 1"

B. Please see "Highly Confidential I&E-RE-12-Attachment 2" for all invoices through September 30, 2021.

C. See table:

		Projected if:		
		Part C. No. 1	**Part C. No. 2**	**Part C. No. 3**
		Settled Prior to Rebuttal	**Settled After Rebuttal Prior to Hearings**	**Settled After Hearings Prior to Briefing**
Engineering, Cost Allocation and Depreciation		$ 319,133	$ 319,133	$ 319,133
Legal		780,000	900,000	1,020,000
Other Consultants		100,000	100,000	100,000
Rate of Return		95,000	95,000	95,000
Notices and Postage		350,000	355,000	355,000
Miscellaneous		65,000	65,000	65,000
Total		$ 1,709,133	$ 1,834,133	$ 1,954,133

Witness: Christopher E. Manning
Date: 10/12/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-16: How much legal and consulting expense has the Company recorded in 2020 and 2021, and projected for FTY 2022 and the FPFTY ending March 2023 for the appeal of Commission decisions?

a) Identify, quantify and explain the amount and show exactly where Aqua has reflected this in its filing.

RESPONSE:

Refer to the Company's responses to OCA-IV-25 and OCA-IV-26. All legal expenses related to acquisitions are charged below the line and are not included in the Company's claim.

Witness: Christopher E. Manning
Date: 10/12/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-25: Identify by amount and account all non-rate case legal expense being requested by Aqua in the FPFTY for the following:

a) Water Operations
b) Wastewater Operations
c) Wastewater Operations – East Bradford
d) Wastewater Operations – Cheltenham
e) Wastewater Operations – East Norriton
f) Wastewater Operations – New Garden

RESPONSE:

A. All non-rate case legal expenses recorded by Aqua are charged to account 633800 of the Water Operations. Aqua does not break out the legal expenses it incurs by division. As stated in Schedule C-9.1 of Exhibit 1-A, the Company plans to incur $644,475 of legal expenses in both the FTY and the FPFTY.

B- F. Aqua does not charge any legal expenses to Wastewater Operations. All legal expenses are charged to Water Operations.

Witness: Christopher E. Manning
Date: 10/12/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-26: Identify by amount and account all non-rate case legal expense recorded by Aqua, by account by month, 2019, 2020, and 2021 to date for the following:

a) Water Operations
b) Wastewater Operations
c) Wastewater Operations – East Bradford
d) Wastewater Operations – Cheltenham
e) Wastewater Operations – East Norriton
f) Wastewater Operations – New Garden

RESPONSE:

A. All non-rate case legal expenses recorded by Aqua are charged to account 633800 of the Water Operations. Please see the tables below for the breakout of all non-rate case legal expense recorded by month from 2019 through present:

Year:	2019			
Account:	633800			
	Category			
Month	Employee Relations	Legal Fee	Union	Month Total
January	$ 64,637.60	$ 27,621.40	$ -	$ 92,259.00
February	$ -	$ 1,242.65	$ -	$ 1,242.65
March	$ 116,270.37	$ 27,130.79	$ -	$ 143,401.16
April	$ -	$ 8,955.50	$ -	$ 8,955.50
May	$ 10,858.54	$ 2,056.70	$ -	$ 12,915.24
June	$ 2,595.62	$ 18,790.83	$ -	$ 21,386.45
July	$ 25,141.12	$ 21,601.50	$ -	$ 46,742.62
August	$ 750.00	$ 3,127.39	$ -	$ 3,877.39
September	$ 17,804.06	$ 2,925.00	$ -	$ 20,729.06
October	$ 69,365.80	$ 33,194.42	$ -	$ 102,560.22
November	$ (53,604.51)	$ 12,562.07	$ -	$ (41,042.44)
December	$ 122,145.19	$ 10,377.48	$ -	$ 132,522.67

Year:	2020			
Account:	633800			
	Category			
Month	Employee Relations	Legal Fee	Union	Month Total
January	$ 15,375.00	$ 7,898.23	$ -	$ 23,273.23
February	$ 144,801.35	$ 4,653.00	$ -	$ 149,454.35
March	$ 103,359.63	$ 7,239.02	$ -	$ 110,598.65
April	$ -	$ 3,583.50	$ -	$ 3,583.50
May	$ 2,938.00	$ 26,952.38	$ -	$ 29,890.38
June	$ 17,679.50	$ 39,346.16	$ 944.00	$ 57,969.66
July	$ 10,455.44	$ 2,928.50	$ -	$ 13,383.94
August	$ -	$ 33,968.64	$ 18,214.00	$ 52,182.64
September	$ -	$ 1,697.50	$ -	$ 1,697.50
October	$ -	$ 23,154.61	$ 7,401.50	$ 30,556.11
November	$ 35,002.00	$ -	$ 4,847.00	$ 39,849.00
December	$ 3,717.50	$ 61,795.69	$ 9,780.00	$ 75,293.19

Year:	2021			
Account:	633800			
	Category			
Month	Employee Relations	Legal Fee	Union	Month Total
January	$ 16,196.67	$ 39,095.10	$ -	$ 55,291.77
February	$ 4,906.00	$ 30,084.00	$ -	$ 34,990.00
March	$ 33,259.50	$ 213,097.75	$ 5,960.50	$ 252,317.75
April	$ -	$ 98,292.46	$ 6,528.00	$ 104,820.46
May	$ -	$ 32,066.83	$ 17,944.00	$ 50,010.83
June	$ 226.00	$ (31,680.61)	$ 14,323.00	$ (17,131.61)
July	$ 113.00	$ 35,487.38	$ -	$ 35,600.38
August	$ -	$ 38,438.88	$ -	$ 38,438.88
September	$ 4,802.50	$ 36,226.37	$ 16,116.00	$ 57,144.87
October	$ -	$ -	$ -	$ -
November	$ -	$ -	$ -	$ -
December	$ -	$ -	$ -	$ -

B-F. Aqua does not charge legal expenses to the Wastewater business. All legal expenses are charged to Water Operations.

Witness: Christopher E. Manning
Date: 10/1/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-55-D: Reference AP Exhibit 1-A, Schedule C-9.1 concerning legal expense:

A. Provide yearly details to support the three-year average of $644,475 including amounts by category/expense type for each year;

B. Provide actual legal expenses for the twelve months ended 3/31/2019, 3/31/2020, and 3/31/2021 broken down by expense type for each twelve-month period;

C. Specify the dollar amount in each twelve-month period in response to Parts A and B above that relates to a particular proceeding, if any.

RESPONSE:

A. Refer to the table below:

	TME 3/31/19	**TME 3/31/20**	**TME 3/31/21**	**3 Year Average**
Employee Relations	504,471	458,592	124,155	362,406
Legal Fees	189,976	133,381	475,704	266,354
Union	-	-	47,147	15,716
Total	$ 694,447	$ 591,973	$ 647,005	$ 644,475

B. Please see the response to part A.

C. Not applicable, as the dollar amounts in the above table are for general legal expenses.

Witness: William C. Packer
Date: 10/19/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-30: Has Aqua experienced reductions in any type of expense in the months March 2020 through the present as a result of operating differently than budgeted in reaction to the Covid-19 pandemic? If so, explain how the Company has operated differently than budgeted for each such month and identify, quantify, and explain the reductions in each type of expense.

RESPONSE:

Largely, costs incurred by the Company as a result of the COVID-19 pandemic and incremental to base operating expenses for safety supplies and protocols, were summarily offset by other reductions in expenses regarding administrative and general costs. The exception to this trend was uncollectible accounts expense which was deferred pursuant to PUC declaration and is continuing to be monitored throughout this proceeding (see AP Statement No. 1).

Regarding inflation, the recent supply chain crisis has continued to erode, and the Company expects that inflationary pressures will be realized in both capital projects and operating expenses. To the extent inflation economic indicators impact the Company's general inflation adjustment and/or other specifically adjusted operating expense account categories, the Company will update its assumptions in its rebuttal case as necessary.

Witness: William C. Packer
Date: 10/19/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-31: Please explain in detail all revisions to the 2020 and 2021 Aqua operating budgets made due to Covid-19, including anticipated cost reductions as well as anticipated cost increases.

RESPONSE:

The Company did not make revisions to its approved operating budgets in 2020 or 2021 specific to COVID. Expenses as incurred have been recorded to the Company's books of account as realized. Concurrently, the Company has also recorded realized savings in certain expense lines affected by the stay at home requirements and safety protocols.

In this application, the adjustments to operating expenses presented by the Company are in Schedule 4.9 of Exhibit 1 – A through 1 – G and its request for continuation of deferred accounting relative to uncollectible accounts expense is described in AP. Statement No. 1.

Witness: William C. Packer
Date: 10/19/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-32: Does Aqua anticipate that the FPFTY ending March 2023 will continue to be impacted by the Covid-19 pandemic? If not, explain why not. If so, identify, quantify, and explain the impacts.

RESPONSE:

Please refer to the response to OCA-VII-30.

Witness: William C. Packer
Date: 10/19/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-33: Has Aqua revised its 2020 or 2021 Capital Expenditures (CapEx) budgets for impacts from the Covid-19 pandemic? If so, identify and provide a copy of the most recent CapEx budgets prior to February 29, 2020 and any subsequently revised 2020 CapEx budgets and explain the changes.

RESPONSE:

No. The Company did not revise either its 2020 or 2021 Capital Expenditures budgets. Notably, utility workers were deemed essential employees and thus any impacts as to timing and cost to date were not experienced. Please see also the response to OCA-VII-30.

Witness: William C. Packer
Date: 10/18/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-42: Has Aqua recorded any deferrals in 2020 or 2021 for interest costs? If so, show in detail all interest costs that Aqua is requesting to defer, including the related amounts of loans at each month end, the related interest rate, and a detailed accounting and explanation of how Aqua applied the related loan proceeds in its utility operations.

RESPONSE:

The Company did not record any deferrals in 2020 or 2021.

Witness: William C. Packer
Date: 11/3/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET X

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-X-7: Show in detail, by month, from inception through the most current month-end available exactly how Aqua has accumulated its Covid-19 deferred regulatory asset for uncollectibles. Include a breakout of amounts between Aqua's water and wastewater utility operations.

RESPONSE:

As noted in the testimony of William C. Packer – AP Statement No. 1, the only amounts that have been deferred to date occasioned by Covid-19 are those costs pertaining to uncollectible accounts expense as shown below:

Water or Sewer	FISCAL_YEAR	ACCOUNT	ACCOUNT_DESC	Values January	February	March	April	May	June	July	August	September	October	November	December
Sewer	2020	141000	Customer Accounts Receivable	2,530,791	3,020,158	2,948,588	3,104,869	3,155,171	3,342,400	3,577,715	3,795,312	3,701,242	3,637,285	3,862,326	4,141,064
		143000	RESERVE-UNCOLLECTABLE ACCTS	(518,504)	(531,311)	(542,900)	(583,971)	(615,886)	(666,429)	(719,421)	(743,184)	(934,233)	(1,017,188)	(1,108,734)	(966,672)
		186520	Reg Asset-COVID19 Recovery Costs	-	-	-	-	-	32,953	32,953	32,953	194,317	194,317	194,317	392,224
	2020 Total			2,012,286	2,488,847	2,405,688	2,520,898	2,539,285	2,708,923	2,891,247	3,085,081	2,961,325	2,814,414	2,947,908	3,566,616
	2021	141000	Customer Accounts Receivable	4,161,023	4,285,555	4,555,115	4,066,338	3,678,058	4,126,075	3,874,183	3,707,316	4,473,378			
		143000	RESERVE-UNCOLLECTABLE ACCTS	(1,006,198)	(1,043,015)	(1,059,825)	(1,092,313)	(657,795)	(685,605)	(738,746)	(771,023)	(829,974)			
		186520	Reg Asset-COVID19 Recovery Costs	392,224	392,224	420,772	420,772	420,772	12,008	12,008	12,008	(115,212)			
	2021 Total			3,547,050	3,634,763	3,916,062	3,394,797	3,441,034	3,452,478	3,147,445	2,948,300	3,528,192			
Sewer Total				5,559,336	6,123,610	6,321,750	5,915,695	5,980,319	6,161,401	6,038,691	6,033,381	6,489,518	2,814,414	2,947,908	3,566,616
Water	2020	141000	Customer Accounts Receivable	35,249,218	37,795,841	35,298,340	37,362,503	39,258,437	41,673,265	44,711,198	45,157,732	43,507,999	45,045,550	45,095,504	46,693,687
		143000	RESERVE-UNCOLLECTABLE ACCTS	(4,230,097)	(4,299,149)	(4,384,888)	(4,829,560)	(5,134,486)	(5,450,487)	(5,667,475)	(6,115,906)	(8,102,563)	(8,687,763)	(9,325,005)	(9,832,972)
		186520	Reg Asset-COVID19 Recovery Costs	-	-	-	-	-	701,365	701,365	701,365	2,941,910	2,941,910	2,941,910	4,334,423
	2020 Total			31,019,121	33,496,691	30,913,451	32,532,943	34,123,951	36,924,144	39,745,088	39,743,191	38,347,345	39,299,696	38,712,409	41,195,137
	2021	141000	Customer Accounts Receivable	50,730,738	50,115,861	40,811,600	44,451,187	46,943,839	46,051,183	48,426,554	45,816,311	47,522,021			
		143000	RESERVE-UNCOLLECTABLE ACCTS	(10,435,604)	(10,967,000)	(10,897,265)	(11,066,995)	(10,696,063)	(10,547,902)	(10,143,122)	(9,901,413)	(9,827,990)			
		186520	Reg Asset-COVID19 Recovery Costs	4,334,423	4,334,423	5,274,258	5,274,258	5,274,258	5,176,016	5,176,016	5,176,016	4,702,640			
	2021 Total			44,629,557	43,483,283	35,188,594	38,658,450	41,522,034	40,679,298	43,459,448	41,090,915	42,396,671			
Water Total				75,648,678	76,979,974	66,102,045	71,191,393	75,645,986	77,603,441	83,204,536	80,834,105	80,744,016	39,299,696	38,712,409	41,195,137
Grand Total				81,208,014	83,103,584	72,423,795	77,107,088	81,626,305	83,764,842	89,243,228	86,867,486	87,233,534	42,114,110	41,660,317	44,761,753

Witness: William C. Packer
Date: 11/3/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET X

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-X-8: Does any portion of Aqua's accumulated Covid-19 deferred regulatory asset for uncollectibles relate to uncollectible revenue for any systems that Aqua acquired since its last base rate case? If so, please identify, quantify and explain in detail each amount of Covid-19 deferral that Aqua has recorded that relates each system that Aqua acquired since Aqua's last rate case.

RESPONSE:

No.

Witness: William C. Packer
Date: 11/3/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET X

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-X-9: Did Aqua offset its accumulated Covid-19 deferred regulatory asset for uncollectibles with any amounts of cost savings related to the Covid-19 pandemic? If not, explain fully why not. If so, identify, quantify and explain all amounts of cost savings that were used as offsets.

RESPONSE:

No. The Company has neither offset, nor added to the amounts of Covid-19 deferred other than costs specific to uncollectible accounts expense.

Witness: William C. Packer
Date: 11/8/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XIII-6: The Essential Utilities Proxy Statement dated March 22, 2021 at page 29 states that: "in November 2020, in recognition of the sacrifices that our front-line essential workers were making during the COVID-19 pandemic, we issued special bonuses to all non-manager employees."

a. What was the amount of those November 2020 COVID-19 pandemic bonuses?

b. How much of the November 2020 bonuses were charged to each of the Aqua PA water and wastewater utilities? Show the amounts by account.

c. Were any amounts of those November 2020 COVID-19 bonuses recorded in deferred costs accounts? If so, how much was recorded in each deferred cost account?

d. Has any amount for COVID-19 pandemic bonuses been included in Aqua PA's rate base or operating expenses for the HTY, FTY or FPFTY? If so, how much in each period, by account.

RESPONSE:

a. $1,000

b. Refer to the table below:

	Total COVID-19 Recognition Award	Account	**Total Charged to Aqua PA**	Water	Wastewater
Aqua PA	$ 550,000	603820	**$ 550,000**	550,000	-
Service	$ 153,000	603820/6349	**$ 60,046**	54,739	5,307
ACO	$ 124,000	603820/6367	**$ 59,031**	53,718	5,313
			$ 669,077	$ 658,458	$ 10,620

c. None.

d. There are no amounts for the COVID-19 Recognition Award in Aqua PA's claim.

Witness: William C. Packer
Date: 11/8/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XIII-7: Page 36 of the Essential Utilities 2020 SEC Form 10-K states as follows: "To maximize our financial flexibility in light of the uncertainty surrounding the impact of the COVID-19 pandemic, we entered into a credit agreement on April 3, 2020, which provided the Company with a short-term borrowing facility of $500,000 in unsecured term loans, which was drawn, and subsequent to the Company's $1,100,000 issuance of long-term debt on April 13, 2020, in May and June of 2020 the Company repaid $300,000 and $200,000 of the term loan, respectively, and based on the Company's ability to access financial markets, we terminated the facility."

a. Is any cost for that term loan or April 3, 2020 credit agreement been included in Aqua PA's cost for the HTY, FTY or FPFTY? If so, how much and in what accounts?

b. Was any cost for the Essential Utilities April 3, 2020 credit agreement charged or allocated to Aqua PA? If not, explain fully why not. If so, identify the amounts charged and allocated to Aqua PA.

c. Has Aqua PA recorded or budgeted/forecasted any deferrals related to cost for the Essential Utilities April 3, 2020 credit agreement been included for the HTY, FTY or FPFTY? If so, how much and in what accounts for each period?

RESPONSE:

a. No.

b. No.

c. No, not applicable.

Witness: William C. Packer
Date: 11/5/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-46: Supplemental Executive Retirement Program (SERP). Has the Company included any amount of SERP costs in its requested revenue requirement for the FPFTY ending March 31, 2023? If "yes", provide the following information:

a. Provide the SERP cost by amount and account, broken out between water and wastewater.

b. Provide the amount of SERP included in the Company's requested revenue requirement broken out between water and wastewater.

c. Provide the comparable SERP cost by amount and account, and broken out between water and wastewater for each calendar year, 2018, 2019 and 2020 as well as the historic test year ended March 31, 2021.

d. Provide all actuarial studies, reports and estimates used for SERP for the years 2018 through 2020 and 2021 to date.

e. Identify by job title and company all current Aqua PA and affiliated company employees and executives that are included in the SERP.

f. Identify by former highest job title and pre-retirement company affiliation for all retired Aqua PA and affiliated company employees and executives that are included in the SERP.

g. Are any of the SERP amounts related to employee contracts with current or former executives? If so, explain fully and provide a copy of the employment agreements.

RESPONSE:

Refer to the Company's response to I&E-RE-69.

Witness: William C. Packer
Date: Original – 11/5/2021
Revised - 11/9/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VII-46: Supplemental Executive Retirement Program (SERP). Has the Company included any amount of SERP costs in its requested revenue requirement for the FPFTY ending March 31, 2023? If "yes", provide the following information:

a. Provide the SERP cost by amount and account, broken out between water and wastewater.

b. Provide the amount of SERP included in the Company's requested revenue requirement broken out between water and wastewater.

c. Provide the comparable SERP cost by amount and account, and broken out between water and wastewater for each calendar year, 2018, 2019 and 2020 as well as the historic test year ended March 31, 2021.

d. Provide all actuarial studies, reports and estimates used for SERP for the years 2018 through 2020 and 2021 to date.

e. Identify by job title and company all current Aqua PA and affiliated company employees and executives that are included in the SERP.

f. Identify by former highest job title and pre-retirement company affiliation for all retired Aqua PA and affiliated company employees and executives that are included in the SERP.

g. Are any of the SERP amounts related to employee contracts with current or former executives? If so, explain fully and provide a copy of the employment agreements.

RESPONSE:

Regarding a. through f. above, please refer to the attached HIGHLY CONFIDENTIAL pdf documents (Attachments 1 through 4), for the 2021, 2020,

2019 non-qualified plan actuarial reports and the most recent cost allocation by employee and title.

Regarding costs incurred prior to and included in the current case, please see the below table:

Account	Account Name	TTM 3/31/2019 Water	TTM 3/31/2019 Wastewater	TTM 3/31/2020 Water	TTM 3/31/2020 Wastewater	HTY Water	HTY Wastewater	FTY Water	FTY Wastewater	FPFTY Water	FPFTY Wastewater
604/704	WT-A&G Empl Benefits - Nonqual Service Costs	$ 89,957	$ -	$ 92,047	$ -	$ 93,798	$ -	$ 95,392	$ -	$ 97,014	$ -
634/734	Management Fee - (Non Qual Plan/SERP)	$ 1,567,762	$ 25,585	$ 1,239,279	$ 44,753	$578,753	$ 55,158	$ 588,591	$ 56,096	$ 598,598	$ 57,050

g. No.

Witness: William C. Packer
Date: 10/14/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-24-D: Reference Minimum Filing Requirements, C. Operating Expenses, OE22 concerning Incentive Compensation and/or bonus plans:

A. Provide a copy of the Company's Incentive Compensation and Bonus Plans for each group of employees;

B. Summarize the criteria to be met before payout;

C. Provide the actual amount of incentive compensation and bonus expense by expense account included in the FYE 3/31/2019, 3/31/2020 and 3/31/2021;

D. Provide the amount of incentive compensation and bonus expense by expense account included in the Company's claim for the FTY ending 3/31/2021;

E. Provide the amount of incentive compensation and bonus expense included in the Company's Exhibit 2 payroll claim for the FPFTY ending 3/31/2023.

RESPONSE:

A. Please see the Company's response to OCA-IV-5.

B. Please see the Company's response to OCA-IV-5.

C-E. Please refer to the table below breaking out the incentive compensation and bonus expense by expense account:

	TME 3/31/19	TME 3/31/20		HTY 3/31/21	FTY 3/31/22	FPFTY 3/31/23
Bonus	$ 1,413,669	$ 1,364,735		$ 2,030,472	$ 2,296,209	$ 2,514,851
Stock Option Compensation	100,865	286,542		101,933	103,717	105,480
PSU Amortization	721,144	318,902		443,559	451,321	458,994
RSU Amortization	130,910	209,288		272,536	277,305	282,019
Total Stock Based Compensation	$ 952,920	$ 814,733		$ 818,028	$ 832,344	$ 846,493

Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc.
Docket Nos. R-2021-3027385 (Water) and R-2021-3027386 (Wastewater)
Exhibit LA-4
Copies of Highly Confidential Material Referenced in the
Direct Testimony of
Ralph C. Smith

Document	Subject	Highly Confidential	No. of Pages	Page No.
OCA-IV-5	Copies of incentive compensation plans effective for Aqua during 2020 through 2023. (Attachments 4 and 5 included)	Yes	20	2 - 21
Highly Confidential Attachments to OCA-VII-46 Revised	Copies of non-qualified plan actuarial reports for 2019 through 2021 and the most recent cost allocation by employee and title (Highly Confidential Attachments 1 through 4)	Yes	66	22 - 87
	Total Pages Including this Page		87	

Witness: William C. Packer
Date: 10/14/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IV

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IV-5: Identify and provide a complete copy of each incentive compensation plan that was in effect for Aqua during 2020 and 2021 and which is to be in effect in 2022 and 2023.

RESPONSE:

Please see the attached plans [HIGHLY CONFIDENTIAL] Attachments 1 through 5. The are currently in effect and will remain in effect through 2023.

PAGES 3-87 ARE HIGHLY CONFIDENTIAL AND HAVE BEEN REDACTED

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Ralph C. Smith, 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: November 11, 2021
*319615

Signature: Ralph C. Smith
Ralph C. Smith

Consultant Address: Larkin & Associates, PLLC
15728 Farmington Road
Livonia, MI 48154

OCA Statement 2

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:		
	:		
v.	:	Docket Nos.	R-2021-3027385
	:		R-2021-3027386
Aqua Pennsylvania, Inc.	:		
Aqua Pennsylvania Wastewater, Inc.	:		

Direct Testimony of
Morgan N. DeAngelo

On Behalf of
Pennsylvania Office of Consumer Advocate

November 10, 2021

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Appendix A: Qualifications of Morgan N. DeAngelo

Introduction

Q. Please state your name, business address and occupation.

A. My name is Morgan N. DeAngelo. My business address is 555 Walnut Street, 5th Floor, Forum Place, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate ("OCA").

Q. Please describe your educational background and qualifications to provide testimony in this case.

A. I have a Master's degree in Business Administration and a Bachelor of Business Administration Degree, with a concentration in Finance and a minor in Accounting from Wilkes University. My educational background and qualifications are described in Appendix A.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Office of Consumer Advocate.

Purpose of Direct Testimony

Q. Please describe the purpose of your Direct Testimony.

A. The purpose of my Direct Testimony is to address impacts the COVID-19 Pandemic has had on Pennsylvania. The Pennsylvania Public Utility Commission ("Commission") should consider the specific facts described in my testimony below, when considering the issues raised by the OCA and other parties in this proceeding. In addition, I address Aqua Pennsylvania Inc. ("Aqua")'s request for a positive acquisition adjustment related to assets

purchased from the Borough of Phoenixville ("Borough"). Finally, I discuss Aqua's proposed Federal Tax Adjustment Charge.

<u>The Pandemic's Impact on People in Pennsylvania</u>

Q. What is the current unemployment rate in Pennsylvania?

A. Due to the COVID-19 Pandemic, the unemployment rate across Pennsylvania reached 16.2% in April 2020. Although that number has since decreased, the current unemployment rate remains much higher than before the Pandemic,[1] at 6.2% as of September 2021. This rate has remained relatively steady since September 2020.[2]

Q. How does the unemployment rate in Pennsylvania compare to that of the United States?

A. Pennsylvania's unemployment rate of 6.2% remains higher than the United States' unemployment rate of 4.8%.[3]

Q. What is the unemployment rate in Aqua's service territory?

A. Aqua has four different divisions, offering service to parts of counties within each: Southeastern Division, Roaring Creek/Susquehanna Division, Honesdale/White Haven Division and Shenango Division. The average unemployment rate for the overall service territory is 5.8%, shown in Table 1. This data reflects the effects of the business closures implemented to mitigate the spread of COVID-19.

---

1 The pre-pandemic unemployment rate in January 2020 was 4.8%.
2 https://www.bls.gov/eag/eag.pa.htm
3 https://www.bls.gov/news.release/pdf/empsit.pdf

Table 1:					
Division	**County**	**Unemployment Rate**	**Division**	**County**	**Unemployment Rate**
Roaring Creek / Susquehanna	Adams	4.2%	Honesdale / White Haven	Carbon	6.1%
	Bradford	5.1%		Lackawanna	6.1%
	Columbia	5.5%		Lehigh	6.0%
	Cumberland	4.1%		Luzerne	7.4%
	Juniata	4.9%		Monroe	6.9%
	Northumberland	6.4%		Northampton	5.4%
	Schuylkill	6.1%		Pike	6.6%
	Snyder	5.4%		Schuylkill	6.1%
Shenango	Clarion	6.3%		Susquehanna	5.2%
	Clearfield	6.5%		Wayne	6.1%
	Crawford	6.2%		Wyoming	5.7%
	Forest	7.7%	Southeastern	Berks	5.8%
	Lawrence	6.9%		Bucks	4.7%
	McKean	6.4%		Chester	3.8%
	Mercer	6.5%		Delaware	5.5%
	Venango	6.3%		Montgomery	4.4%
	Warren	5.8%			

Q. Has the Pandemic had an effect on Aqua's ability to collect payments for its services?

A. Yes. The Pandemic has caused an increase in At-Risk Accounts and Aggregate Arrears.

Q. What is an At-Risk Account?

A. An At-Risk account refers to customer accounts that are at risk for disconnections and shut offs due to nonpayment.

Q. What are Aggregate Arrears?

A. Aggregate Arrears are the total amount of money owed.

Q. Please describe the At-Risk Accounts and Aggregate Arrears regarding Aqua customers.

A. The Commission has requested all utility companies to comply with temporary, quarterly reporting of At-Risk Accounts and Aggregate Arrears. The latest report for Aqua's data can be found at Docket No. M-2020-3019244. The data is broken down into categories showing Residential and Non-Residential customers. Table 2 compares the total number of customer At-Risk Accounts for termination in July-September 2019 (pre-pandemic) and July-September 2021, along with their percent change.[4]

Table 2:	**Aqua Customer Accounts At-Risk of Termination**		
	Residential	Non-Residential	Total Accounts
Jul-19	45,042	12,367	57,409
Jul-21	52,434	15,288	67,722
Percent Change	16.41%	23.62%	17.96%
Aug-19	50,441	13,508	63,949
Aug-21	48,173	14,630	62,803
Percent Change	-4.50%	8.31%	-1.79%
Sep-19	55,311	14,003	69,314
Sep-21	50,441	16,341	66,782
Percent Change	-8.80%	16.70%	-3.65%

Table 3 compares the total Aggregate Dollars of Arrears for Residential and Non-Residential customers from July-September 2019 and in 2021, along with their percent change.

Table 3:	**Aqua Customer Accounts At-Risk of Termination**		
	Residential	Non-Residential	Total Arrears
Jul-19	$ 9,238,219	$ 1,465,838	$ 10,704,057
Jul-21	$ 14,029,091	$ 3,108,697	$ 17,137,788
Percent Change	51.86%	112.08%	60.11%
Aug-19	$ 9,201,219	$ 1,334,616	$ 10,535,835
Aug-21	$ 13,764,799	$ 3,062,141	$ 16,826,940
Percent Change	49.60%	129.44%	59.71%
Sep-19	$ 9,684,840	$ 1,603,606	$ 11,288,446
Sep-21	$ 13,915,184	$ 3,274,306	$ 17,189,490
Percent Change	43.68%	104.18%	52.28%

[4] Percent Change = ((New Number – Original Number) / (Original Number)) * 100

Table 4 compares the Residential and Non-Residential customer accounts disconnected for Non-Payment with Dollar Amounts owed from July-September 2021.

Table 4:	**Aqua Customer Accounts Disconnected for Non-Payment With Dollar Amounts Owed**		
	Residential	Non-Residential	Total Accounts
Jul-21	561	25	586
Aug-21	440	15	455
Sep-21	538	14	552

Q. Are these trends anticipated given the ongoing Pandemic?

A. Yes, given the economic circumstances of the Pandemic and the moratorium on terminations, these trends are not surprising. Being that Aqua's service territory is located in areas with steady unemployment rates, it is reasonable to assume that some At-Risk customers are experiencing negative impacts from the current economic conditions, causing them to fall behind in utility payments.

Q. Are there other sources of data, in addition to unemployment rates, which attempt to quantify the effects of COVID-19 on Pennsylvania citizens?

A. Yes, the Household Pulse Survey ("Pulse Survey") is another tool that has been used to gather data and measure these impacts.

Q. What is the Pulse Survey?

A. The Pulse Survey is organized by the United States Census Bureau. It is an experimental project in which data is collected to discover the impacts of the COVID-19 Pandemic. The data is then organized by state to display how people are affected through different categories. The categories include employment status, food security, housing, educational

disruption, among others. The data has been organized into different phases beginning in April 2020, until the present time.

Q. Does the Pulse Survey show data for specific locations throughout Pennsylvania, i.e., Aqua service territory?

A. No, the data found in the Pulse Survey is collected from residents in Pennsylvania as a whole. However, we do know the unemployment rates for the specific counties Aqua services, and it is likely there are Aqua customers experiencing some of the Pandemic-related hardships reflected in the Survey.

Q. From which phase of the Pulse Survey was the data that you discuss below taken?

A. The following data is taken from Phase 3.2, Week 39 of the Pulse Survey from September 29, 2021, through October 11, 2021.[5] The data extrapolates trends using survey responses collected from a portion of Pennsylvania residents, 18 years of age and older.[6]

Q. From this data, who is experiencing the greatest impact from the COVID-19 Pandemic?

A. The data shows people ages 25-39, and those who identify as Hispanic, or Latino are experiencing the greatest impact, which can be seen in Tables 5 and 6. Similarly, the lower a household's income, the greater the impact the Pandemic has on income loss, seen in Table 7. However, the COVID-19 Pandemic impacts are not limited to these groups, and the effects can be felt throughout each of the other categories of customers.

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[5] https://www.census.gov/data/tables/2021/demo/hhp/hhp39.html

[6] Number of those reporting = 9,760,505

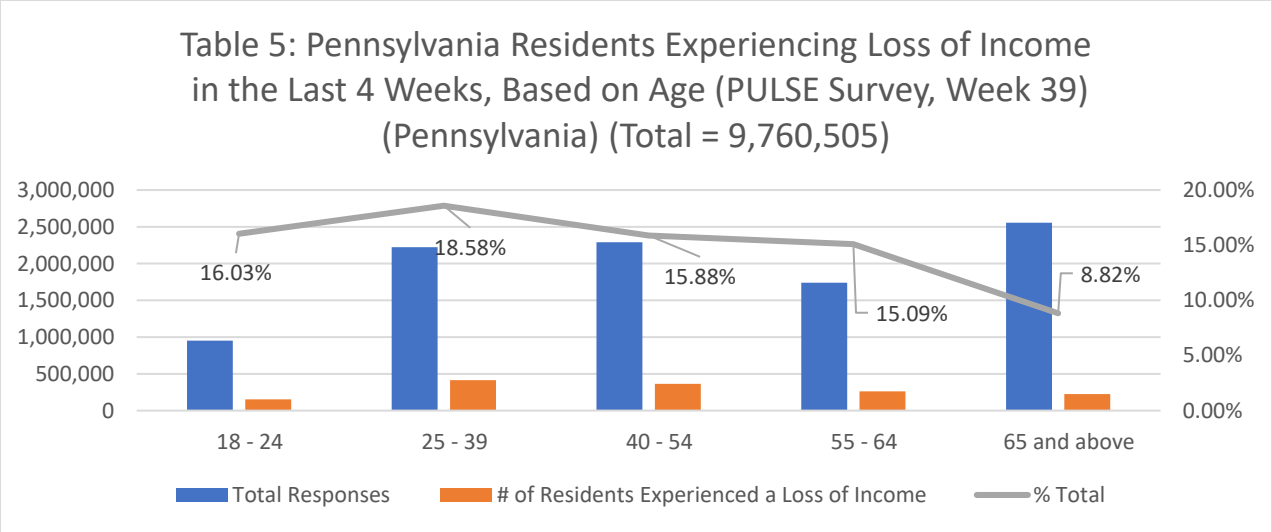
Table 5: Pennsylvania Residents Experiencing Loss of Income in the Last 4 Weeks, Based on Age (PULSE Survey, Week 39) (Pennsylvania) (Total = 9,760,505)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
20.00%
15.00%
10.00%
5.00%
0.00%
16.03%
18.58%
15.88%
15.09%
8.82%
18 - 24
25 - 39
40 - 54
55 - 64
65 and above
Total Responses
# of Residents Experienced a Loss of Income
% Total

1

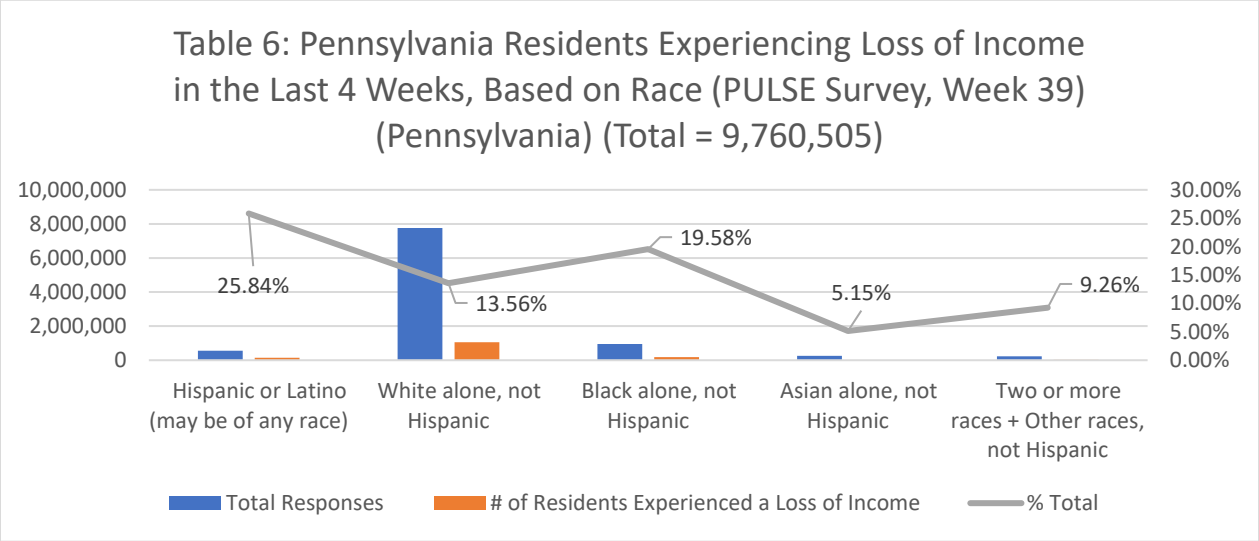
Table 6: Pennsylvania Residents Experiencing Loss of Income in the Last 4 Weeks, Based on Race (PULSE Survey, Week 39) (Pennsylvania) (Total = 9,760,505)
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
25.84%
13.56%
19.58%
5.15%
9.26%
Hispanic or Latino (may be of any race)
White alone, not Hispanic
Black alone, not Hispanic
Asian alone, not Hispanic
Two or more races + Other races, not Hispanic
Total Responses
# of Residents Experienced a Loss of Income
% Total

2

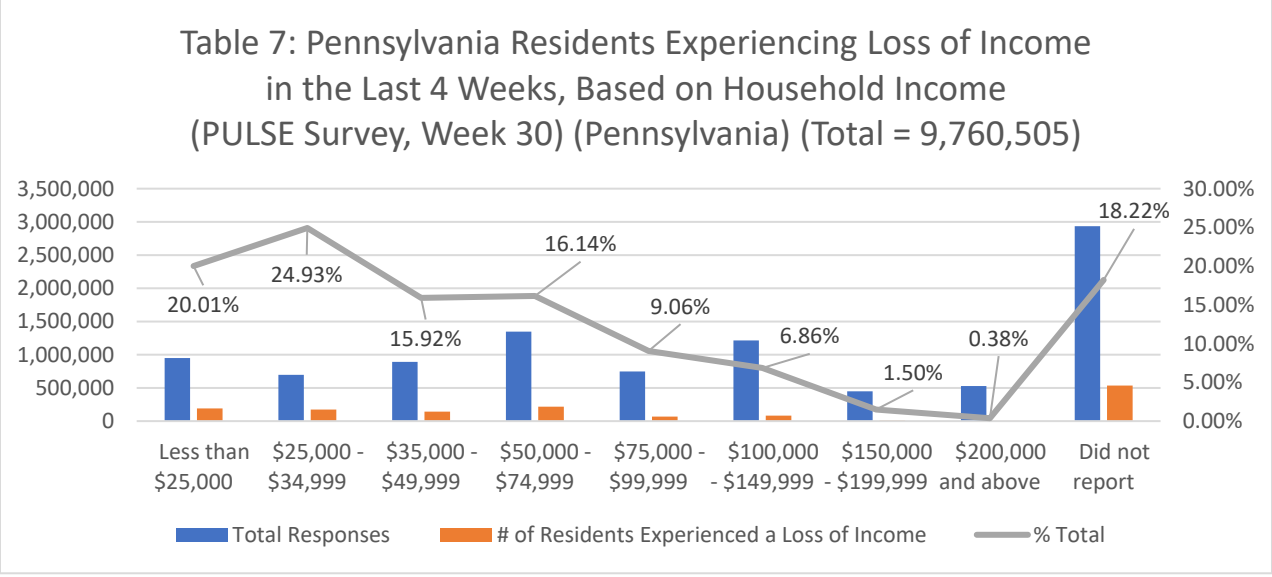
Table 7: Pennsylvania Residents Experiencing Loss of Income in the Last 4 Weeks, Based on Household Income (PULSE Survey, Week 30) (Pennsylvania) (Total = 9,760,505)
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
20.01%
24.93%
15.92%
16.14%
9.06%
6.86%
1.50%
0.38%
18.22%
Less than $25,000
$25,000 - $34,999
$35,000 - $49,999
$50,000 - $74,999
$75,000 - $99,999
$100,000 - $149,999
$150,000 - $199,999
$200,000 and above
Did not report
Total Responses
# of Residents Experienced a Loss of Income
% Total

3

Q. What can you conclude about the Pandemic's impact on Pennsylvania?

A. Over the last nearly two years, Pennsylvania, along with the rest of the world, has faced many different hardships due to the COVID-19 Pandemic. The impacts continue to affect Pennsylvania residents, as we can see in the Household Pulse Surveys and monthly reports to the Commission. Numbers remain significantly higher than before the Pandemic, causing impacts that will be faced in the coming months and long-term.

<u>The Pennsylvania State Coincident Index</u>

Q. What is the State Coincident Index?

A. The State Coincident Index is published monthly by the Federal Reserve Bank of Philadelphia. "The Coincident Indexes combine four state-level indicators to summarize current economic conditions in a single statistic, such as (1) nonfarm payroll employment, (2) average hours worked in manufacturing by production workers, (3) the unemployment rate and (4) wage and salary disbursements deflated by the consumer price index (U.S. city average). The trend for each state's index is set to the trend of its gross domestic product (GDP), so long-term growth in the state's index matches long-term growth in its GDP."[7] The index is set so that the level of economic activity in 2007 is equal to 100. A rise in the index shows economic activity is expanding and a decline indicates a contraction in economic activity.

Q. What does the latest data from the Pennsylvania State Coincident Index show?

A. The Pennsylvania State Coincident Index for September 2021 was released October 27, 2021. Since June 2021, the coincident index for Pennsylvania rose 2.0% to 118.7.

[7] https://www.philadelphiafed.org/surveys-and-data/regional-economic-analysis/state-coincident-indexes

Q. What can you conclude about this information?

A. The Coincident Index for both Pennsylvania (118.7) and the United States (129.9) continues to slowly recover from the plunge it took in April 2020 to 89.5. Although the level of payroll employment increased over the past three months, numbers remain lower than pre-Pandemic, February 2020.[8] This outcome will continue to affect Pennsylvania in the months to come, therefore, it is important for the Commission to consider all the data when considering the issues raised by the OCA and other parties in this proceeding.

<u>Aqua's Claim for a Positive Acquisition Adjustment (Borough of Phoenixville)</u>

Q. Please discuss Aqua's claim in regard to the acquisition of water system assets of the Borough of Phoenixville.

A. On April 26, 2017, Aqua filed an application to seek the Commission's approval of its acquisition of a portion of the Borough's water system assets, which are located in East Pikeland Township, Chester County and Upper Providence Township, Montgomery County, Pennsylvania. The Commission approved the application and the system assets were purchased by Aqua from the Borough on December 5, 2019.[9] The depreciated original cost of the assets was $1,026,724.[10] Aqua paid $2,437,305 more for the assets than the depreciated original cost.[11] Aqua is requesting that a positive acquisition adjustment of $121,865 (reflecting a 20-year amortization of the difference between the

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8 February 2020; Pennsylvania's Coincident Index = 122.76, United States' Coincident Index = 130.81

9 Aqua Exhibit 3-A (Pg. 21 and 26 of the PDF)

10 Aqua Exhibit 3-A (Pg. 41 of the PDF)

11 Purchase Price: $3,464,029

purchase price and depreciated original cost) be approved for ratemaking purposes in this case.[12]

Q. Does the Public Utility Code contain requirements that must be met by a utility in order to reflect a positive acquisition adjustment in rates?

A. Yes. Subsection (a) of Section 1327 of the Public Utility Code outlines nine criteria, all of which must be met by a utility in order to include an acquisition adjustment in rate base and an amortization of the acquisition adjustment in expenses. These criteria include the following:

(1) The property acquired is used and useful in providing service;
(2) The acquired utility had 3,300 or fewer customer connections or was non-viable in the absence of the acquisition;
(3) The acquired entity was not, at the time of acquisition, furnishing and maintaining adequate, efficient, safe and reasonable service and facilities, evidence of which shall include, but not be limited to, any one or more of the following:
    (i) violation of statutory or regulatory requirements of the Department of Environmental Resources or the commission concerning the safety, adequacy, efficiency or reasonableness of service and facilities;
    (ii) a finding by the commission of inadequate financial, managerial or technical ability of the small water or sewer utility;
    (iii) a finding by the commission that there is a present deficiency concerning the availability of water, the palatability of water or the provision of water at adequate volume and pressure;
    (iv) a finding by the commission that the small water or sewer utility, because of necessary improvements to its plant or distribution system, cannot reasonably be expected to furnish and maintain adequate service to its customers in the future at rates equal to or less than those of the acquiring public utility;
    (v) any other facts, as the commission may determine, that evidence the inability of the small water or sewer utility to furnish or maintain adequate, efficient, safe and reasonable service and facilities;
(4) reasonable and prudent investments will be made to assure that the customers served by the property will receive adequate, efficient, safe and reasonable service;
(5) the public utility…is in agreement with the acquisition and the negotiations which led to the acquisition were conducted at arm's length;

[12] Aqua Exhibit 1-A, Schedule C-5.1

(6) the actual purchase price is reasonable;
(7) neither the acquiring nor the selling public utility, municipal corporation or person is an affiliated interest of the other;
(8) the rates charged by the acquiring public utility to its preacquisition customers will not increase unreasonably because of the acquisition; and
(9) the excess of the acquisition cost over the depreciated original cost will be added to the rate base to be amortized as an addition to expense over a reasonable period of time with corresponding reductions in the rate base.

Q. Has Aqua met all nine of these criteria to support its expense treatment of the acquisition adjustment related to the Borough?

A. No. Aqua has not met all nine criteria necessary to support its inclusion of the acquisition adjustment associated with the purchase of the Borough in this case. Specifically, Aqua has not met the criteria under Section 1327(a)(3).

Q. Section 1327(a)(3) requires that, in order for a utility to recognize an acquisition adjustment in rates, the acquired company must not, at the time of acquisition, be providing and maintaining adequate, efficient, safe and reasonable service and facilities. Has Aqua provided any evidence that the Borough was not providing adequate service to its customers at the time of acquisition?

A. No. Aqua has not shown, in any way, that the Borough was providing inadequate service to its customers at the time of acquisition. First, the Company has provided no evidence that the Borough was in violation of statutory or regulatory requirements of the Department of Environmental Protection or the Commission.

Second, the Commission made no findings of inadequate financial, managerial or technical ability of the Borough.

Third, no deficiencies were found by the Commission concerning the availability of water, the palatability of water or the provision of water at adequate volume and pressure.

Fourth, no issues with adequate service due to necessary improvements to its plant or distribution system were found by the Commission.

As stated above, the fifth criteria under Section 1327(a)(3) is "any other facts, as the commission may determine, that evidence the inability of the small water or sewer utility to furnish or maintain adequate, efficient, safe and reasonable service and facilities." In support of this criteria, Aqua claims the following three facts:

a. Provider was manually reading residential and commercial meters.

b. Non-revenue water estimated at 68%.

c. 30% (32/105) of system hydrants needed repair or replacement.[13]

Q. Has Aqua shown that, due to these facts, the Borough was not providing adequate service at the time of acquisition?

A. No. At the time of the acquisition, Aqua had no specified plans to improve the acquired assets.[14] The Borough was in full compliance with its Pennsylvania Department of Environmental Protection ("DEP") permits and reporting.[15] The Asset Purchase Agreement between the Borough and Aqua also contains representations and warranties

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[13] Aqua Exhibit 3-A (Pg. 19 of the PDF)

[14] Joint Application of Aqua Pennsylvania, Inc. and the Borough of Phoenixville, Docket Nos. A-2018-2642837 and A-2018-2642839 ("Joint Application"), Application ¶ 40. Aqua committed to install master meters for the purpose of metering water purchased from the Borough at two delivery points. Joint Application, Application, Exhibit D (Asset Purchase Agreement) ¶ 3(f). https://www.puc.pa.gov/pcdocs/1549943.pdf

[15] Joint Application, Application ¶ 39.

from the Borough that it was in compliance with all regulatory and other laws at the time of acquisition.[16]

After the acquisition in 2019, Aqua reports doing hydrant inspections and leak surveys in January to September 2020 period.[17]

Q. Did the Borough want to stop serving outside its boundaries due to the assets needing improvements that it was unable to make?

A. No. The Borough initially planned to keep the assets and filed a petition that asked the Commission to determine that its service outside its municipal boundaries should not be regulated.[18] The Commission denied that request and encouraged the Borough to divest itself of its extraterritorial water service. The Commission stated as follows:

> Finally, the Commission would be remiss if we did not acknowledge Phoenixville's concern regarding the regulatory "burden" related to Commission jurisdiction. However, the Commission believes these so-called "burdens" are justifiable and if reasonable, recoverable from ratepayers. Commission oversight provides voiceless extraterritorial customers with service protections and it ensures reasonable rates that will provide for safe and reliable service over the long term. Similarly, the Commission would also be remiss if we did not acknowledge that unlike in the prior municipal corporation cases, there are viable options for the Borough, namely, PAWC's provision of public utility service in Upper Providence Township and Aqua Pennsylvania's provision of public utility service in Schuylkill Township. In conclusion, Phoenixville clearly has options to these perceived regulatory "burdens" which may prove beneficial to explore.[19]

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16 Joint Application, Application, Exhibit D (Asset Purchase Agreement) ¶ 4(d)

17 Aqua Exhibit 3-A (Pg. 20 of the PDF)

18 Petition of the Borough of Phoenixville for a Declaratory Order that the Provision of Water and Wastewater Service to Isolated Customers in Adjoining Townships Does Not Constitute the Provision of Public Utility Service Under 66 Pa. C.S. § 102, Docket No. P-2013-2389321, Petition (October 23, 2013) ("Borough Petition"). https://www.puc.pa.gov/pcdocs/1253094.pdf

19 Borough Petition, Order Pg. 7-8 (May 19, 2015). https://www.puc.pa.gov/pcdocs/1360664.docx

It is also significant that this was an acquisition of a portion of the Borough's assets and not an abandonment of service. The Borough continues to own and operate a water system serving 5,818 customers and a wastewater system serving 5,862 customers.[20] In addition, the Borough continues to provide wholesale water supply to both Aqua and Pennsylvania American Water Company ("PAWC").[21]

Q. Do you agree with Aqua that the Company should receive a positive acquisition adjustment for its acquisition of a portion of the Borough's water system assets?

A. No. This acquisition does not meet the requirements of Section 1327(a) of the Public Utility Code because there is insufficient evidence showing that Borough was a troubled system and was not furnishing and maintaining adequate, efficient, safe and reasonable service and facilities at the time of the acquisition. As such, I recommend that Aqua's proposal for a positive acquisition adjustment should be rejected. The removal of this adjustment is reflected in the testimony and schedules of OCA witness Ralph C. Smith.

<u>Federal Tax Adjustment Clause Rider</u>

Q. Please explain Aqua's Federal Tax Adjustment Clause Proposal.

A. Aqua is proposing to create a new water and wastewater surcharge named the Federal Tax Adjustment Surcharge ("FTAS"). [22] This surcharge is designed to provide for adjustments to base rates reflecting the effects of future increases or decreases in the federal corporate

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[20] Borough of Phoenixville, 2020 Water Annual Report and 2020 Wastewater Annual Report. https://www.puc.pa.gov/pcdocs/1701465.pdf, https://www.puc.pa.gov/pcdocs/1701467.pdf

[21] Joint Application, Docket Nos. A-2018-2642837 and A-2018-2642839, Recommended Decision, Attachment (Jointly Stipulated Proposed Findings of Fact) ¶¶ 12-18 (October 1, 2019). https://www.puc.pa.gov/pcdocs/1638331.pdf

[22] Aqua Statement No. 8. Pg. 14, lines 20-24

income tax rate. Aqua is proposing this rider based on the premise that the corporate federal income tax rate may be increased from 21% to 28%. Aqua believes that the FTAS is needed because such a change in the tax rate will have a significant impact on Aqua's revenue requirement. Aqua also believes delay in adjusting rates can result in significant refunds or retroactive collections.[23]

Q. Do you agree with Aqua's proposal?

A. No. Aqua's proposal is not necessary. The Company implies that it believes the time it took the Commission to implement the tax rate change resulting from the Tax Cuts and Jobs Act ("TCJA") was too slow. That tax rate change was signed into law in mid-December 2017 and took effect on January 1, 2018. In February 2018, the Commission initiated a generic proceeding to determine the effects of the TCJA on public utilities' tax liabilities and by July 2018 the Commission had set temporary rates and implemented surcredits to begin the flow through of the tax rate decrease. In my view the justification for the FTAC as a means of expediting the process is unfounded.

Also, it is uncertain when the next change in the corporate federal income tax rate will occur, and whether the legislation enacting the change will include other provisions which affect corporate federal income tax liabilities. For example, the TCJA included provisions affecting the tax treatment of net operating loss carrybacks and caps and limited the net interest deduction.[24] Those types of additional provisions need to be given consideration

[23] Aqua Statement No. 8. Pg. 15, lines 12-21

[24] https://www.irs.gov/newsroom/tax-cuts-and-jobs-act-a-comparison-for-businesses

before changes in rates are allowed. Therefore, such changes should be addressed by the Commission on a generic basis for all the public utilities it regulates.

Conclusion

Q. Does this conclude your testimony?

A. Yes, it does. However, I reserve the right to modify or supplement my testimony as necessary.

Appendix A

QUALIFICATIONS OF
MORGAN N. DEANGELO

Education:

2020 M.B.A., Wilkes University

2018 B.B.A. concentration in Finance, minor in Accounting, Wilkes University

Positions:

June 2020 – Present	Regulatory Analyst, Pennsylvania Office of Consumer Advocate
2018 – 2020	Graduate Assistant, Office of Student Development, Wilkes University

Experience:

I am currently employed by the Pennsylvania Office of Attorney General, Office of Consumer Advocate (OCA) as a Regulatory Analyst. In this position, my responsibilities of reviewing utility company filings with the Pennsylvania Public Utility Commission (Commission) and analyzing the financial, economic, rate of return, and policy issues that are relevant to the filings. Additionally, I am tasked with preparing recommendations for the OCA's involvement in utility filings with the PA PUC, writing testimony and presenting oral testimony on behalf of the OCA.

Relevant Training:

IPU Regulatory Studies - Intermediate Course, August 2020

IPU Accounting and Ratemaking Course, February 2021

Previous Cases where testimony was submitted:

Petition of Twin Lakes Utilities, Inc., P-2020-3020914

Application of Pennsylvania American Water Company, A-2020-3019634

PaPUC v. UGI Utilities, Inc. – Electric Division, R-2021-3023618

PaPUC v. Pittsburgh Water and Sewer Authority, R-2021-3024773, R-2021,3024774, R-2021-3024779

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Morgan N. DeAngelo, 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: November 10, 2021

Signature: Morgan N. DeAngelo
Morgan N. DeAngelo

*319617

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

RE:	Pennsylvania Public Utility Commission	:	
		:	Docket Nos. R-2021-3027385
	v.	:	
		:	R-2021-3027386
	Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc.	:	

DIRECT TESTIMONY

OF

DAVID J. GARRETT

ON BEHALF OF

THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

November 10, 2021

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Exhibit DJG-17	Hamada Model

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is David J. Garrett. My business address is 101 Park Avenue, Suite 1125, Oklahoma City, Oklahoma 73102.

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

A. I am the managing member of Resolve Utility Consulting, LLC. I am an independent consultant specializing in public utility regulation.

Q. Please summarize your educational background and professional experience.

A. I received a B.B.A. degree with a major in Finance, an M.B.A. degree, and a J.D. degree from the University of Oklahoma. I worked in private legal practice for several years before working as assistant general counsel at the Oklahoma Corporation Commission in 2011. At the commission, I worked in the Office of General Counsel in regulatory proceedings. In 2012, I worked for the Public Utility Division as a regulatory analyst providing testimony in regulatory proceedings. After leaving the Oklahoma commission I formed Resolve Utility Consulting PLLC, where I have represented numerous consumer groups and state agencies in utility regulatory proceedings, primarily in the areas of cost of capital and depreciation. I am a Certified Depreciation Professional with the Society of Depreciation Professionals. I am also a Certified Rate of Return Analyst with the Society of Utility and Regulatory Financial Analysts. A more complete description of my qualifications and regulatory experience is included in my curriculum vitae.[1]

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[1] Exhibit DJG-1.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Pennsylvania Office of Consumer Advocate (”OCA”).

Q. Describe the purpose and scope of your testimony in this proceeding.

A. The primary purpose of my testimony is to provide my opinion on the estimated cost of capital and awarded rate of return recommendation for Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc. (collectively “Aqua” or the “Company”). I am responding to the direct testimony of Aqua witness Paul R. Moul.

Q. Please describe the organization of your testimony.

A. In the executive summary below, I provide an overview of cost of capital issues, my recommendations, and my response to the Company’s testimony on these issues. In the sections that follow, I discuss the legal standards governing the awarded return issue as well as the general concepts involved in estimating the cost of equity. I provide detailed analysis of the Discounted Cash Flow (“DCF”) Model, the Capital Asset Pricing Model (“CAPM”), including my results for these models and my responses to Mr. Moul’s results. I also address capital structure, which is a key component to the cost of capital.

II. EXECUTIVE SUMMARY

Q. Please summarize your recommendation to the Commission.

A. My testimony can be distilled to the following recommendations:

- The Commission should reject the Company's proposed return on equity ("ROE") of 10.75% as excessive and unsupported. An objective cost of equity analysis shows that Aqua's cost of equity is about 7.2%. This estimate is the average result of the two well-established cost of equity models I used in this case, the DCF Model and CAPM. Using reasonable and objective inputs, the DCF Model indicates a cost of equity of 8.0% and the CAPM indicates a cost of equity of 6.8%. Based on these findings, I recommend the Commission adopt an awarded return on equity of 8.0% for Aqua. Although 8.0% is very likely higher than Aqua's market-based cost of equity when the CAPM results are considered, an awarded ROE of 8.0% would be reasonable, and it would represent a meaningful, yet relatively gradual move towards market-based cost of equity.

- I recommend the Commission reject Aqua's proposed capital structure consisting of 46% debt and 54% equity. This equity-rich capital structure has the effect of increasing capital costs above a reasonable level. The average debt ratio of the proxy group is 50%. Thus, Aqua's proposed debt ratio is too low to be considered reasonable. I recommend an imputed capital structure consisting of 50% debt and 50% equity, which is equal to the proxy group in this case.

- I do not recommend an adjustment to the Company's proposed cost of debt of 4.0%. My adjustments to the Company's proposed ROE and capital structure equate to an overall weighted average rate of return of 6.0%.

My proposed adjustments are illustrated in the table below.[2]

Figure 1:
Weighted Average Rate of Return Proposal

Capital Component	Proposed Ratio	Cost Rate	Weighted Cost
Debt	50.0%	4.00%	2.00%
Fund Equity	50.0%	8.00%	4.00%
Total	100.0%		6.00%

The details supporting my proposed adjustments are discussed further in my testimony.

[2] *See also* Exhibit DJG-16.

A. Overview and Background

Q. Please explain the concept and significance of the Cost of Capital.

A. The term cost of capital, or WACC,[3] refers to the weighted average cost of the components within a company's capital structure, including the costs of both debt and equity. The three primary components of a company's WACC include the following:

1. Cost of Debt
2. Cost of Equity
3. Capital Structure

Determining the cost of debt is relatively straight-forward. Interest payments on bonds are contractual, embedded costs that are generally calculated by dividing total interest payments by the book value of outstanding debt. Determining the cost of equity, on the other hand, is more complex. Unlike the known, contractual and embedded cost of debt, there is not any explicitly quantifiable "cost" of equity. Instead, the cost of equity must be estimated through various financial models. Cost of capital is expressed as a weighted average because it is based upon a company's relative levels of debt and equity, as defined by the particular capital structure of that company. The basic WACC equation used in regulatory proceedings is presented as follows:

[3] The terms cost of capital and WACC are synonymous and used interchangeably throughout this testimony.

Equation 1:
Weighted Average Cost of Capital

$$WACC = \left(\frac{D}{D+E}\right) C_D + \left(\frac{E}{D+E}\right) C_E$$

where:	*WACC*	=	*weighted average cost of capital*
	D	=	*book value of debt*
	C_D	=	*embedded cost of debt capital*
	E	=	*book value of equity*
	C_E	=	*market-based cost of equity capital*

Companies in the competitive market often use their WACC as the discount rate to determine the value of capital projects, so it is important that this figure be estimated accurately.

Q. How do experts and regulators typically assess the ROEs awarded to utilities and the corresponding opportunity for shareholders?

A. Investors, company managers, and academics around the world have used models, such as the CAPM and DCF to closely estimate cost of equity for many years, and weigh the results achieved against the results from proxy groups. Each of these concepts will be discussed in more detail later in my testimony.

B. <u>Response to the Company's Testimony</u>

Q. Please provide an overview of the problems you have identified with the Company's testimony regarding cost of equity, capital structure, and the resulting awarded ROE.

A. Mr. Moul proposes a return on equity of 10.75%.[4] This is based on his cost of equity analyses for Aqua, which range as high as 13.4%.[5] Mr. Moul's recommendation is based on the CAPM, DCF Model, other risk premium models, and a comparable earnings

[4] Direct Testimony of Paul R. Moul p. 7, line 5.

[5] *Id*. at line 3.

approach. However, several of his key assumptions and inputs to these models violate fundamental, widely accepted tenets in finance and valuation. I find several aspects of Mr. Moul's approach and resulting recommendations to be problematic, including the leverage adjustment used in his DCF Model and CAPM. These issues are further discussed in my testimony.

III. LEGAL STANDARDS AND THE AWARDED RETURN

Q. Discuss the legal standards governing the awarded rate of return on capital investments for regulated utilities.

A. In *Wilcox v. Consolidated Gas Co. of New York*, the U.S. Supreme Court first addressed the meaning of a fair rate of return for public utilities.[6] The Court found that "the amount of risk in the business is a most important factor" in determining the appropriate allowed rate of return.[7] As referenced earlier, in two subsequent landmark cases, the Court set forth the standards by which public utilities are allowed to earn a return on capital investments. First, in *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, the Court held:

> 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. . . but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and

[6] *Wilcox v. Consolidated Gas Co. of New York*, 212 U.S. 19 (1909).

[7] *Id.* at 48.

> economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.[8]

Then, in *Federal Power Commission v. Hope Natural Gas Company*, the Court expanded on the guidelines set forth in *Bluefield* and stated:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses <u>but also for the capital costs of the business.</u> These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.[9]

The cost of capital models I have employed in this case are designed to be in accordance with the foregoing legal standards.

Q. Is it important that the awarded rate of return be based on the Company's actual cost of capital?

A. Yes. The U.S. Supreme Court in *Hope* makes it clear that the allowed return should be based on the actual cost of capital. Moreover, the awarded return must also be fair, just, and reasonable under the circumstances of each case. Among the circumstances that must be considered in each case are the broad economic and financial impacts to the cost of equity and awarded return caused by market forces and other factors. Scholars agree that the actual cost of capital must be considered:

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[8] *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, 692–93 (1923).

[9] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944) (emphasis added) (internal citations omitted).

> Since by definition the cost of capital of a regulated firm represents precisely the expected return that investors could anticipate from other investments while bearing no more or less risk, and since investors will not provide capital unless the investment is expected to yield its opportunity cost of capital, the correspondence of the definition of the cost of capital with the court's definition of legally required earnings appears clear.[10]

The models I have employed in this case closely estimate the Company's true cost of equity. If the Commission sets the awarded return based on my lower and more reasonable rate of return, it will better comply with the U.S. Supreme Court's standards, allow the Company to maintain its financial integrity, and achieve reasonable returns for its investors. On the other hand, if the Commission sets the allowed rate of return much higher than the true cost of capital, as requested by Aqua, it will result in an inappropriate transfer of wealth from ratepayers to the Company.[11]

Q. What does this legal standard mean for determining the awarded return and the cost of capital?

A. The awarded return and the cost of capital are different but related concepts. On the one hand, the legal and technical standards encompassing this issue require that the awarded return reflect the true cost of capital. Yet on the other hand, the two concepts differ in that the legal standards do not mandate that awarded returns exactly match the cost of capital. Instead, awarded returns are set through the regulatory process and may be influenced by various factors other than objective market drivers. By contrast, the cost of capital should be evaluated objectively and be closely tied to economic realities, such as stock prices,

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[10] A. Lawrence Kolbe, James A. Read, Jr. & George R. Hall, *The Cost of Capital: Estimating the Rate of Return for Public Utilities* 21 (The MIT Press 1984).

[11] Roger A. Morin, *New Regulatory Finance* 23–24 (Public Utilities Reports, Inc. 2006) (1994) ("[I]f the allowed rate of return is greater than the cost of capital, capital investments are undertaken and investors' opportunity costs are more than achieved. Any excess earnings over and above those required to service debt capital accrue to the equity holders, and the stock price increases. In this case, the wealth transfer occurs from ratepayers to shareholders.").

dividends, growth rates, and, most importantly, risk. The cost of capital can be estimated by financial models used by firms, investors, and academics around the world for decades. The problem is, with respect to regulated utilities, there has been a trend in which awarded returns fail to closely track with market-based cost of capital, as further discussed below. To the extent this occurs, the results are detrimental to ratepayers and the state's economy.

Q. Describe the economic impact that occurs when the awarded return strays too far from the U.S. Supreme Court's time-honored cost of equity standards.

A. When the awarded ROE is set far above the cost of equity, it runs the risk of violating the U.S. Supreme Court's standards. This has the effect of diverting dollars from ratepayers for their internal or business uses that would otherwise support the local or state economy. Moreover, establishing an awarded return that far exceeds true cost of capital effectively prevents the awarded returns from changing along with economic conditions. This is especially true given the fact that regulators tend to be influenced by the awarded returns in other jurisdictions, regardless of the various unknown factors influencing those awarded returns. If regulators rely too heavily on the awarded returns from other jurisdictions, they can create a cycle over time that bears little relation to the market-based cost of equity. In fact, this is exactly what we have observed since 1990. This is yet another reason why it is crucial for regulators to put more emphasis on the target utility's actual cost of equity than on the awarded returns from other jurisdictions. Awarded returns may be influenced by settlements and other political factors not based on true market conditions. In contrast, the true cost of equity as estimated through objective models is not influenced by these factors but is instead driven by market-based factors.

Q. Can you illustrate and provide a comparison of the relationship between awarded utility returns and market cost of equity since 1990?

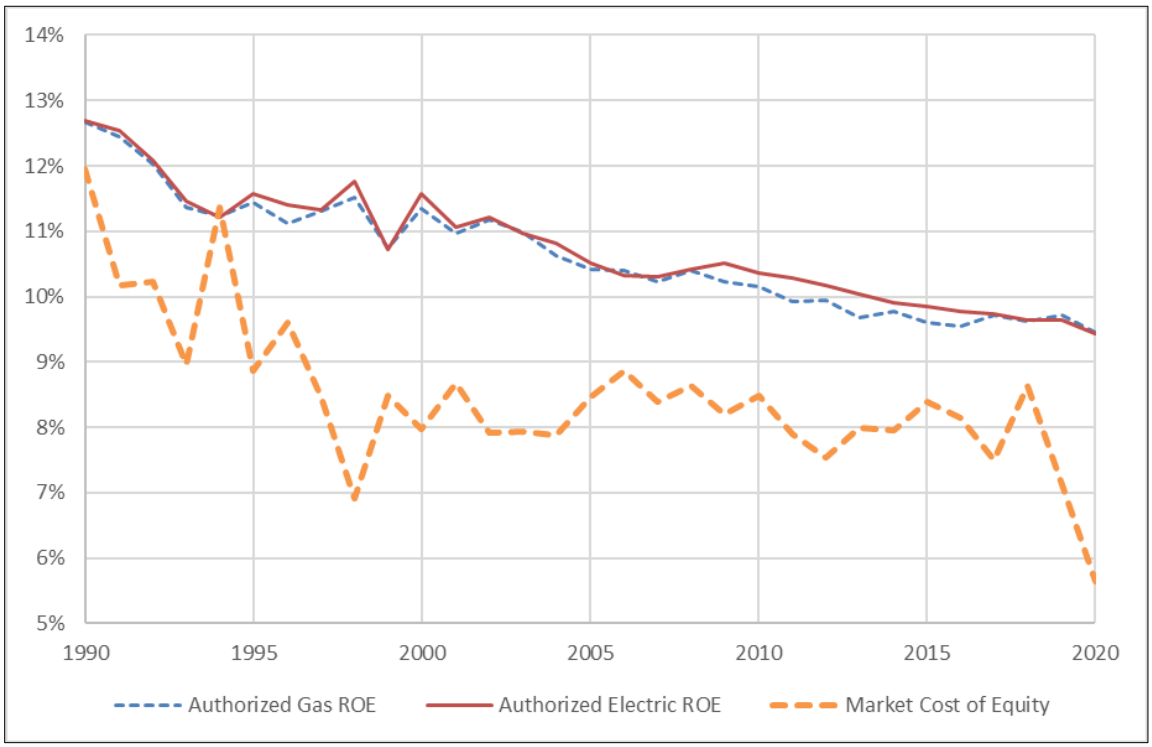
A. Yes. As shown in the figure below, awarded returns for electric and gas utilities have been above the average required market return since 1990.[12] Because utility stocks are consistently far less risky than the average stock in the marketplace, the cost of equity for utility companies is less than the market cost of equity.

To illustrate this fact, the graph in the figure below shows three trend lines. The top two line are the average annual awarded returns since 1990 for U.S. regulated electric and gas utilities. The bottom line is the required market return over the same period. As discussed in more detail later in my testimony, the required market return is essentially the return that investors would require if they invested in the entire market and, as such, the required market return is essentially the cost of equity of the entire market. Since it is undisputed that utility stocks are less risky than the average stock in the market, then the utilities' cost of equity must be less than the market cost of equity.[13] Thus, awarded returns (the solid line) should generally be below the market cost of equity, since awarded returns are supposed to be based on true cost of equity.

[12] Exhibit DJG-13.

[13] This fact can be objectively measured through a term called "beta," as discussed later in the testimony. Utility betas are less than one, which means utility stocks are less risky than the "average" stock in the market.

Figure 2:
Awarded ROEs vs. Market Cost of Equity



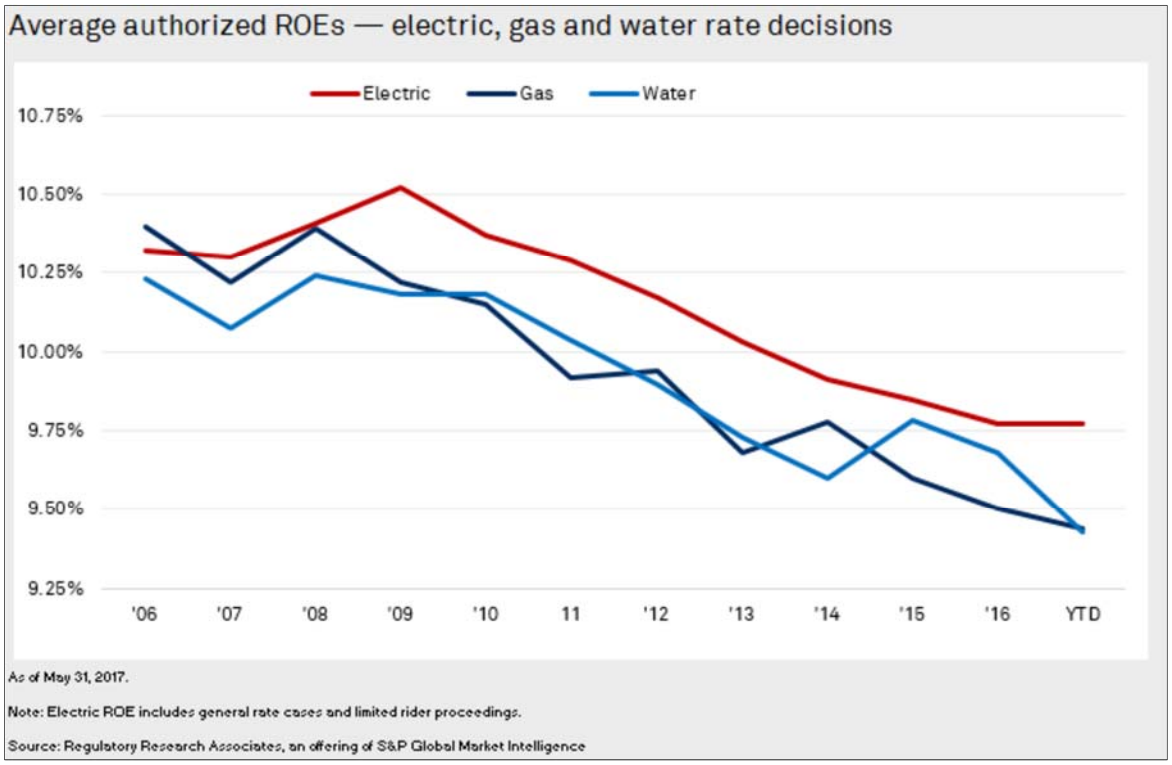
Notwithstanding the data in this graph, awarded ROEs have been consistently above the market cost of equity for many years. Also as shown in this graph, since 1990, there was only one year in which the average awarded ROE was below the market cost of equity. In 1994, regulators awarded ROEs that were the closest to utilities' market-based cost of equity. In my opinion, when awarded ROEs for utilities are below the market cost of equity, regulators more closely conform to the standards set forth by *Hope* and *Bluefield* and minimize the excess wealth transfer from ratepayers to shareholders.

Q. Does this concept also apply to regulated water utilities?

A. Yes. Like regulated electric and gas utilities, water utilities are also less risky than the average stock in the market portfolio. We can objectively measure this fact through water

utility betas.[14] As shown in the graph below, the average authorized ROEs for water utilities have generally tracked with those of gas utilities.

Figure 3:
Awarded ROEs vs. Market Cost of Equity



Comparing this figure with Figure 2 above, we can see that authorized ROEs for water utilities have also exceeded the market cost of equity. Again, the cost of equity for a regulated utility, including water utilities, should be below the market cost of equity. In 2017, the average authorized ROE for water utilities was about 9.4%.[15] As demonstrated

[14] *See* Exhibit DJG-8. The concept of beta will be discussed further in my testimony; however, since the average beta of the proxy group is less than 1.0, we have an objective way to determine that if the Company were publicly traded, the return required by its equity investors would be less than the return required on the market portfolio.

[15] S&P Global Market Intelligence, *Water Rate Case Activity: How It Ebbs and Flows*, June 23, 2017. https://www.spglobal.com/marketintelligence/en/news-insights/research/water-rate-case-activity-how-it-ebbs-and-flows

in my testimony, the highest reasonable estimate for the Company's cost of equity is about 8.0%.

Q. Have other analysts commented on this national phenomenon of awarded ROEs exceeding market-based cost equity for utilities?

A. Yes. In his article published in Public Utilities Fortnightly in 2016, Steve Huntoon observed that even though utility stocks are less risky than the stocks of competitive industries, utility stocks have nonetheless outperformed the broader market.[16] Specifically, Mr. Huntoon notes the following three points which lead to a problematic conclusion:

> 1. Jack Bogle, the founder of Vanguard Group and a Wall Street legend, provides rigorous analysis that the long-term total return for the broader market will be around 7 percent going forward. Another Wall Street legend, Professor Burton Malkiel, corroborates that 7 percent in the latest edition of his seminal work, A Random Walk Down Wall Street.
>
> 2. Institutions like pension funds are validating the first point by piling on risky investments to try and get to a 7.5 percent total return, as reported by the Wall Street Journal.
>
> 3. Utilities are being granted returns on equity around 10 percent.[17]

Other scholars have also observed that awarded ROEs have not appropriately tracked with declining interest rates over the years, and that excessive awarded ROEs have negative economic impacts. In a white paper issued in 2017, Charles S. Griffey stated:

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[16] Steve Huntoon, "Nice Work If You Can Get It," Public Utilities Fortnightly (Aug. 2016) available at: http://energy-counsel.com/docs/Nice-Work-If-You-Can-Get-It-Fortnightly-August-2016.pdf.

[17] *Id*.

> The "risk premium" being granted to utility shareholders is now higher than it has ever been over the last 35 years. Excessive utility ROEs are detrimental to utility customers and the economy as a whole. From a societal standpoint, granting ROEs that are higher than necessary to attract investment creates an inefficient allocation of capital, diverting available funds away from more efficient investments. From the utility customer perspective, if a utility's awarded and/or achieved ROE is higher than necessary to attract capital, customers pay higher rates without receiving any corresponding benefit.[18]

It is interesting that both Mr. Huntoon and Mr. Griffey use the word "sticky" in their articles to describe the fact that awarded ROEs have declined at a much slower rate than interest rates and other economic factors resulting in a decline in capital costs and expected returns on the market. It is not hard to see why this phenomenon of "sticky" ROEs has occurred. Because awarded ROEs are often based primarily on a comparison with other awarded ROEs around the country, the average awarded returns effectively fail to adapt to true market conditions, and regulators seem reluctant to deviate from the average. Once utilities and regulatory commissions become accustomed to awarding rates of return higher than market conditions actually require, this trend becomes difficult to reverse. The fact is, utility stocks are less risky than the average stock in the market, and thus, awarded ROEs should be less than the expected return on the market. However, that is rarely the case. My proposal assists the Commission in "see[ing] the gap between allowed returns and cost of capital,"[19] and reconciling this issue in an equitable manner.[20]

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[18] Charles S. Griffey, "When 'What Goes Up' Does Not Come Down: Recent Trends in Utility Returns," White Paper (February 2017).

[19] Leonard Hyman & William Tilles, "Don't Cry for Utility Shareholders, America," Public Utilities Fortnightly (October 2016) available at https://www.fortnightly.com/fortnightly/2016/10/dont-cry-utility-shareholders-america.

[20] Although the articles cited in this section were not specifically discussing water utilities, as demonstrated in the figures and discussion preceding this section, the authorized ROEs for water utilities have also exceeded the cost of equity for the market portfolio.

Q. Summarize the legal standards governing the awarded ROE issue.

A. The Commission should strive to move the awarded return to a level more closely aligned with the Company's actual, market-derived cost of capital while keeping in mind the following two legal principles outlined below.

1. Risk is the most important factor when determining the awarded return. The awarded return should be commensurate with those returns on investments of corresponding risk.

The legal standards articulated in *Hope* and *Bluefield* demonstrate that the U.S. Supreme Court understands one of the most basic, fundamental concepts in financial theory: the more (or less) risk an investor assumes, the more (or less) return the investor requires. Since utility stocks are low risk, the return required by equity investors should be relatively low. I have used financial models to closely estimate the Company's cost of equity, and these financial models account for risk. The cost of equity models confirm that the industry experiences relatively low levels of risk by producing relatively low cost of equity results. In turn, the awarded ROE in this case should reflect Aqua's relatively low market risk.

2. The awarded return should be sufficient to assure financial soundness and integrity under efficient management.

Because awarded returns in the regulatory environment have not closely tracked market-based trends and commensurate risk, utility companies have been able to remain more than financially sound, perhaps despite management inefficiencies. In fact, the transfer of wealth from ratepayers to utilities has been so far removed from actual cost-based drivers that a utility could remain financially sound even under relatively inefficient management. Therefore, regulatory commissions should strive to set utilities' returns based on actual market conditions to promote prudent and efficient management and minimize economic waste.

IV. GENERAL CONCEPTS AND METHODOLOGY

Q. Discuss your approach to estimating the cost of equity in this case.

A. While a competitive firm must estimate its own cost of capital to assess the profitability of competing capital projects, regulators determine a utility's cost of capital to establish a fair rate of return. The legal standards set forth above do not include specific guidelines regarding the models that must be used to estimate the cost of equity for utilities. Over the years, however, regulatory commissions have consistently relied on several models. The models I have employed in this case have been the two most widely used and accepted in regulatory proceedings for many years. The specific inputs and calculations for these models are described in more detail below.

Q. Please explain why you used multiple models to estimate the cost of equity.

A. These models attempt to measure the return on equity required by investors by estimating several different inputs. It is my preference to use multiple models because the results of any one model may contain a degree of imprecision, especially depending on the reliability of the inputs used at the time of conducting the model. By using multiple models, the analyst can compare the results of the models and look for outlying results and inconsistencies. Likewise, if multiple models produce a similar result, it may indicate a narrower range for the cost of equity estimate.[21]

[21] However, the use of multiple models alone does not provide these benefits if several key assumptions and inputs to these models violate fundamental, widely accepted tenets in finance and valuation as discussed later in this testimony.

Q. Please discuss the benefits of choosing a proxy group of companies in conducting cost of capital analyses.

A. The cost of equity models in this case can be used to estimate the cost of capital of any individual, publicly traded company. There are advantages, however, to conducting cost of capital analysis on a proxy group of companies that are comparable to the target company. First, it is better to assess the financial soundness of a utility by comparing it to a group of other financially sound utilities. Second, using a proxy group provides more reliability and confidence in the overall results because there is a larger sample size. Finally, the use of a proxy group is often a pure necessity when the target company is a subsidiary that is not publicly traded. This is because the financial models used to estimate the cost of equity require information from publicly traded firms, such as stock prices and dividends.

Q. Describe the proxy group you selected in this case.

A. In this case, I chose to use the same proxy group used by Mr. Moul. There could be reasonable arguments made for the inclusion or exclusion of a particular company in a proxy group; however, the cost of equity results are influenced far more by the underlying assumptions and inputs to the various financial models than the composition of the proxy group.[22] By using the same proxy group, we can remove a relatively insignificant variable from the equation and focus on the primary factors driving Aqua's cost of equity estimate.

[22] Exhibit DJG-2.

V. RISK AND RETURN CONCEPTS

Q. Discuss the general relationship between risk and return.

A. Risk is among the most important factors for the Commission to consider when determining the allowed return. Thus, it is necessary to understand the relationship between risk and return. There is a direct relationship between risk and return: the more (or less) risk an investor assumes, the larger (or smaller) return the investor will demand. There are two primary types of risk: firm-specific risk and market risk. Firm-specific risk affects individual companies, while market risk affects all companies in the market to varying degrees.

Q. Discuss the differences between firm-specific risk and market risk.

A. Firm-specific risk affects individual companies, rather than the entire market. For example, a competitive firm might overestimate customer demand for a new product, resulting in reduced sales revenue. This is an example of a firm-specific risk called "project risk."[23] There are several other types of firm-specific risks, including: (1) "financial risk" – the risk that equity investors of leveraged firms face as residual claimants on earnings; (2) "default risk" – the risk that a firm will default on its debt securities; and (3) "business risk" – which encompasses all other operating and managerial factors that may result in investors realizing less than their expected return in that particular company. While firm-specific risk affects individual companies, market risk affects all companies in the market to varying degrees. Examples of market risk include interest rate risk, inflation risk, and the

[23] Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 62–63 (3rd ed., John Wiley & Sons, Inc. 2012).

risk of major socio-economic events. When there are changes in these risk factors, they affect all firms in the market to some extent.[24]

Analysis of the U.S. market in 2001 provides a good example for contrasting firm-specific risk and market risk. During that year, Enron Corp.'s stock fell from $80 per share to its low (less than $1) when the company filed bankruptcy at the end of the year. If an investor's portfolio had held only Enron stock at the beginning of 2001, this irrational investor would have lost the entire investment by the end of the year due to assuming the full exposure of Enron's firm-specific risk (in that case, imprudent management). On the other hand, a rational, diversified investor who invested the same amount of capital in a portfolio holding every stock in the S&P 500 would have had a much different result that year. The rational investor would have been relatively unaffected by the fall of Enron because his or her portfolio included about 499 other stocks. Each of those stocks, however, would have been affected by various market risk factors that occurred that year. Thus, the rational investor would have incurred a relatively minor loss due to market risk factors, while the irrational investor would have lost everything due to firm-specific risk factors.

Q. Can equity investors reasonably minimize firm-specific risk?

A. Yes. A fundamental concept in finance is that firm-specific risk can be eliminated through diversification.[25] If someone irrationally invested all his or her funds in one firm, he or she would be exposed to all the firm-specific risk and the market risk inherent in that single

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[24] *See* Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 149 (9th ed., McGraw-Hill/Irwin 2013).

[25] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 179–80 (3rd ed., South Western Cengage Learning 2010).

firm. Rational investors, however, are risk-averse and seek to eliminate risk they can control. Investors can eliminate firm-specific risk by adding more stocks to their portfolio through a process called "diversification." There are two reasons why diversification eliminates firm-specific risk.

First, each stock in a diversified portfolio represents a much smaller percentage of the overall portfolio than it would in a portfolio of just one or a few stocks. Thus, any firm-specific action that changes the stock price of one stock in the diversified portfolio will have only a small impact on the entire portfolio.[26]

The second reason why diversification eliminates firm-specific risk is that the effects of firm-specific actions on stock prices can be either positive or negative for each stock. Thus, in large diversified portfolios, the net effect of these positive and negative firm-specific risk factors will be essentially zero and will not affect the value of the overall portfolio.[27] Firm-specific risk is also called "diversifiable risk" because it can be easily eliminated through diversification.

Q. Is it well-known and accepted that, because firm-specific risk can be easily eliminated through diversification, the market does not reward such risk through higher returns?

A. Yes. Because investors eliminate firm-specific risk through diversification, they know they cannot expect a higher return for assuming the firm-specific risk in any one company. Thus, the risks associated with an individual firm's operations are not rewarded by the market. In fact, firm-specific risk is also called "unrewarded" risk for this reason. In other

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[26] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 64 (3rd ed., John Wiley & Sons, Inc. 2012).

[27] *Id.*

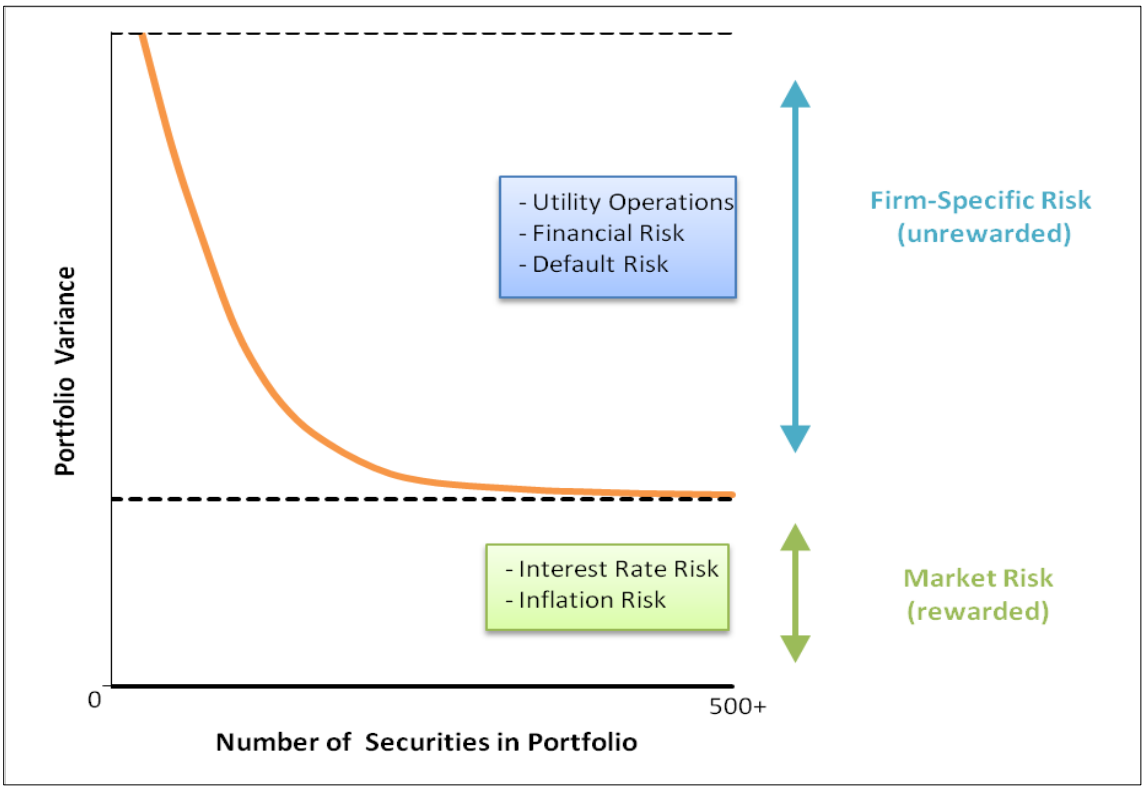
words, if firm-specific risks were rewarded by the market, then investors would expect higher returns for each individual stock in which they invested. Market risk, on the other hand, cannot be eliminated through diversification. Because market risk cannot be eliminated through diversification, investors expect a return for assuming this type of risk. Market risk is also called "systematic risk." Scholars recognize the fact that market risk, or systematic risk, is the only type of risk for which investors expect a return for bearing:

> If investors can cheaply eliminate some risks through diversification, then we should not expect a security to earn higher returns for risks that can be eliminated through diversification. Investors can expect compensation <u>only</u> for bearing systematic risk (i.e., risk that cannot be diversified away).[28]

These important concepts are illustrated in the figure below. Some form of this figure is found in many financial textbooks.

[28] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180 (3rd ed., South Western Cengage Learning 2010) (emphasis added).

Figure 4:
Effects of Portfolio Diversification



This figure shows that as stocks are added to a portfolio, the amount of firm-specific risk is reduced until it is essentially eliminated. No matter how many stocks are added, however, there remains a certain level of fixed market risk. The level of market risk will vary from firm to firm. Market risk is the only type of risk that is rewarded by the market and is thus the primary type of risk the Commission should consider when determining the allowed return.

Q. Describe how market risk is measured.

A. Investors who want to eliminate firm-specific risk must hold a fully diversified portfolio. To determine the amount of risk that a single stock adds to the overall market portfolio, investors measure the covariance between a single stock and the market portfolio. The

result of this calculation is called "beta."[29] Beta represents the sensitivity of a given security to the market as a whole. The market portfolio of all stocks has a beta equal to one. Stocks with betas greater than 1.0 are relatively more sensitive to market risk than the average stock. For example, if the market increases (or decreases) by 1.0%, a stock with a beta of 1.5 will, on average, increase (or decrease) by 1.5%. In contrast, stocks with betas of less than 1.0 are less sensitive to market risk, such that if the market increases (or decreases) by 1.0%, a stock with a beta of 0.5 will, on average, only increase (or decrease) by 0.5%. Thus, stocks with low betas are relatively insulated from market conditions. The beta term is used in the CAPM to estimate the cost of equity, which is discussed in more detail later.[30]

Q. Are public utilities characterized as defensive firms that have low betas, have low market risk, and are relatively insulated from overall market conditions?

A. Yes. Although market risk affects all firms in the market, it affects different firms to varying degrees. Firms with high betas are affected more than firms with low betas, which is why firms with high betas are riskier. Stocks with betas greater than one are generally known as "cyclical stocks." Firms in cyclical industries are sensitive to recurring patterns of recession and recovery known as the "business cycle."[31] Thus, cyclical firms are exposed to a greater level of market risk. Securities with betas less than one, on the other hand, are known as "defensive stocks." Companies in defensive industries, such as public

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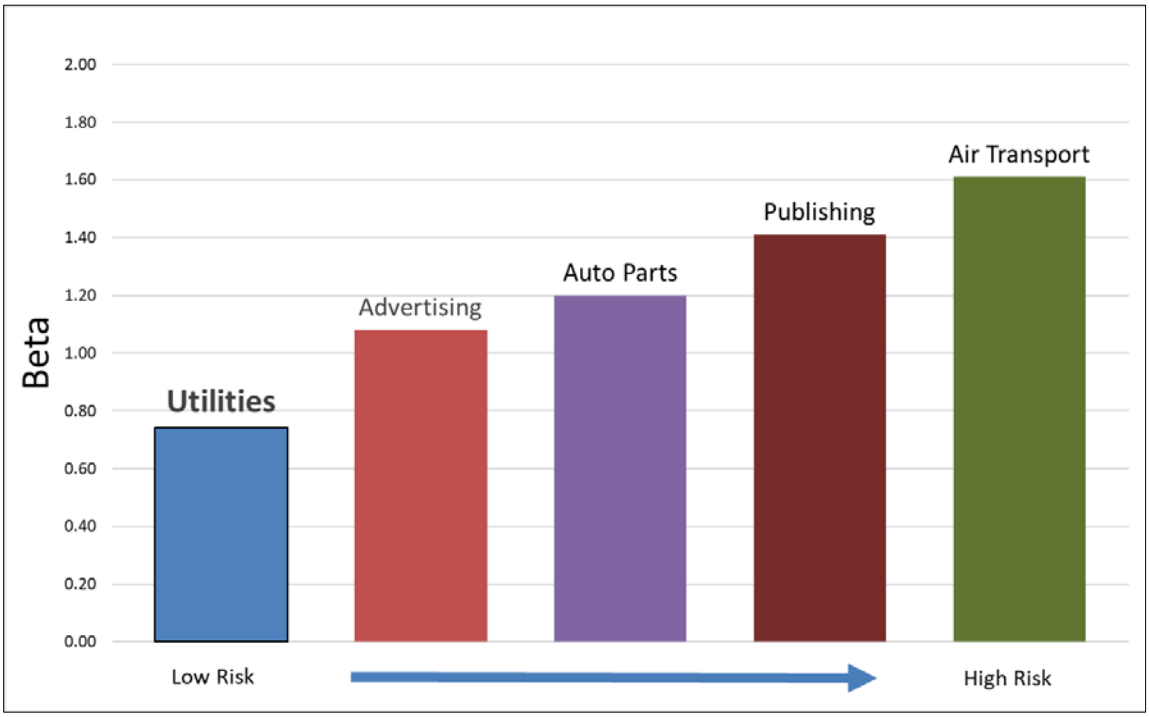
[29] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180–81 (3rd ed., South Western Cengage Learning 2010).

[30] Though it will be discussed in more detail later, Exhibit DJG-8 shows that the average beta of the proxy group was less than 1.0. This confirms the well-known concept that utilities are relatively low-risk firms.

[31] *See* Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 382 (9th ed., McGraw-Hill/Irwin 2013).

utility companies, "will have low betas and performance that is comparatively unaffected by overall market conditions."[32] In fact, financial textbooks often use utility companies as prime examples of low-risk, defensive firms.[33] The figure below compares the betas of several industries and illustrates that the utility industry is one of the least risky industries in the U.S. market.[34]

Figure 5:
Beta by Industry



[32] *Id.* at 383.

[33] *Id.*; *see also* Aswath Damodaran, Investment Valuation: Tools and Techniques for Determining the Value of Any Asset 196 (3rd ed., John Wiley & Sons, Inc. 2012).

[34] *See* Betas by Sector (US) at http://pages.stern.nyu.edu/~adamodar/. The exact beta calculations are not as important as illustrating the well-known fact that utilities are low-risk companies. The fact that the utility industry is one of the lowest risk industries in the country should not change from year to year.

The fact that utilities are defensive firms that are exposed to little market risk is beneficial to society. When the business cycle enters a recession, consumers can be assured that their utility companies will be able to maintain normal business operations and provide safe and reliable service under prudent management. Likewise, utility investors can be confident that utility stock prices will not fluctuate widely. So, while it is preferable for utilities to be defensive firms that experience little market risk and relatively insulated from market conditions, this should also be appropriately reflected in Aqua's awarded return.

VI. DCF ANALYSIS

Q. Describe the DCF Model.

A. The DCF Model is based on a fundamental financial model called the "dividend discount model," which maintains that the value of a security is equal to the present value of the future cash flows it generates. Cash flows from common stock are paid to investors in the form of dividends. There are several variations of the DCF Model. These versions, along with other formulas and theories related to the DCF Model are discussed in more detail in Appendix A. For this case, I chose to use the Quarterly Approximation DCF Model because it accounts for the quarterly growth of dividends (as opposed to annual growth). I also used this variation of the DCF Model in the interest of reasonableness, as it produces the highest cost of equity estimates compared with the other DCF Model variations.

Q. Describe the inputs to the DCF Model.

A. There are three primary inputs in the DCF Model: (1) stock price; (2) dividend; and (3) the long-term growth rate. The stock prices and dividends are known inputs based on recorded

data, while the growth rate projection must be estimated. The formula is presented as follows:

Equation 2:
Quarterly Approximation Discounted Cash Flow Model

$$K = \left[\frac{d_0(1+g)^{1/4}}{P_0} + (1+g)^{1/4}\right]^4 - 1$$

where: K = *discount rate / required return*
d_0 = *current quarterly dividend per share*
P_0 = *stock price*
g = *expected growth rate of future dividends*

I discuss each of these inputs separately below.

A. Stock Price

Q. How did you determine the stock price input of the DCF Model?

A. For the stock price (P_0), I used a 30-day average of stock prices for each company in the proxy group.[35] Analysts sometimes rely on average stock prices for longer periods (e.g., 60, 90, or 180 days). According to the efficient market hypothesis, however, markets reflect all relevant information available at a particular time, and prices adjust instantaneously to the arrival of new information.[36] Past stock prices, in essence, reflect outdated information. The DCF Model used in utility rate cases is a derivation of the dividend discount model, which is used to determine the current value of an asset. Thus, according to the dividend discount model and the efficient market hypothesis, the value for

[35] Exhibit DJG-3.

[36] *See* Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, Vol. 25, No. 2 The Journal of Finance 383 (1970).

the "P_0" term in the DCF Model should technically be the current stock price, rather than an average.

Q. Why did you use a 30-day average for the current stock price input?

A. Using a short-term average of stock prices for the current stock price input adheres to market efficiency principles while avoiding any irregularities that may arise from using a single current stock price. In the context of a utility rate proceeding there is a significant length of time from when an application is filed until testimony is due. Choosing a current stock price for one particular day could raise a separate issue concerning which day was chosen to be used in the analysis. In addition, a single stock price on a particular day may be unusually high or low. It is arguably ill-advised to use a single stock price in a model that is ultimately used to set rates for several years, especially if a stock is experiencing some volatility. Thus, it is preferable to use a short-term average of stock prices, which represents a good balance between adhering to well-established principles of market efficiency while avoiding any unnecessary contentions that may arise from using a single stock price on a given day. The stock prices I used in my DCF analysis are based on 30-day averages of adjusted closing stock prices for each company in the proxy group.[37]

B. <u>Dividend</u>

Q. Describe how you determined the dividend input of the DCF Model.

A. The dividend term in the Quarterly Approximation DCF Model is the current quarterly dividend per share (d_0). I obtained the most recent quarterly dividend paid for each proxy

[37] Exhibit DJG-3. Adjusted closing prices, rather than actual closing prices, are ideal for analyzing historical stock prices. The adjusted price provides an accurate representation of the firm's equity value beyond the mere market price because it accounts for stock splits and dividends.

company.[38] The Quarterly Approximation DCF Model assumes that the company increases its dividend payments each quarter. Thus, the model assumes that each quarterly dividend is greater than the previous one by $(1 + g)^{0.25}$. This expression could be described as the dividend quarterly growth rate, where the term "g" is the growth rate and the exponential term "0.25" signifies one quarter of the year.

Q. Does the Quarterly Approximation DCF Model result in the highest cost of equity in this case relative to other DCF Models, all else held constant?

A. Yes. The Quarterly Approximation DCF Model I employed in this case results in a higher DCF cost of equity estimate than the annual or semi-annual DCF Models due to the quarterly compounding of dividends inherent in the model. In essence, the Quarterly Approximation DCF Model I used results in the highest cost of equity estimate, all else held constant.

Q. Are the stock price and dividend inputs for each proxy company a significant issue in this case?

A. No. Although my stock price and dividend inputs are more recent than those used by Mr. Moul, there is not a statistically significant difference between them because utility stock prices and dividends are generally quite stable. This is another reason that cost of capital models such as the CAPM and the DCF Model are well-suited to be used for utilities. The differences between my DCF Model and Mr. Moul's DCF Model are primarily driven by differences in our growth rate estimates, which are further discussed below.

[38] Exhibit DJG-4. Nasdaq Dividend History, http://www.nasdaq.com/quotes/dividend-history.aspx.

C. Growth Rate

Q. Summarize the growth rate input in the DCF Model.

A. The most critical input in the DCF Model is the growth rate. Unlike the stock price and dividend inputs, the growth rate input (g) must be estimated. As a result, the growth rate is often the most contentious DCF input in utility rate cases. The DCF model used in this case is based on the constant growth valuation model. Under this model, a stock is valued by the present value of its future cash flows in the form of dividends. Before future cash flows are discounted by the cost of equity, however, they must be "grown" into the future by a long-term growth rate. As stated above, one of the inherent assumptions of this model is that these cash flows in the form of dividends grow at a constant rate forever. Thus, the growth rate term in the constant growth DCF model is often called the "constant," "stable," or "terminal" growth rate. For young, high-growth firms, estimating the growth rate to be used in the model can be especially difficult, and may require the use of multi-stage growth models. For mature, low-growth firms such as utilities, however, estimating the terminal growth rate is more transparent. The growth term of the DCF Model is one of the most important, yet apparently most misunderstood, aspects of cost of equity estimations in utility regulatory proceedings. Therefore, I have devoted a more detailed explanation of this issue in the following sections, which are organized as follows:

(1) The Various Determinants of Growth

(2) Reasonable Estimates for Long-Term Growth

(3) Quantitative vs. Qualitative Determinants of Utility Growth: Circular References, "Flatworm" Growth, and the Problem with Analysts' Growth Rates

(4) Growth Rate Recommendation

Q. Describe the various determinants of growth that might be considered for the terminal growth rate input in the DCF Model.

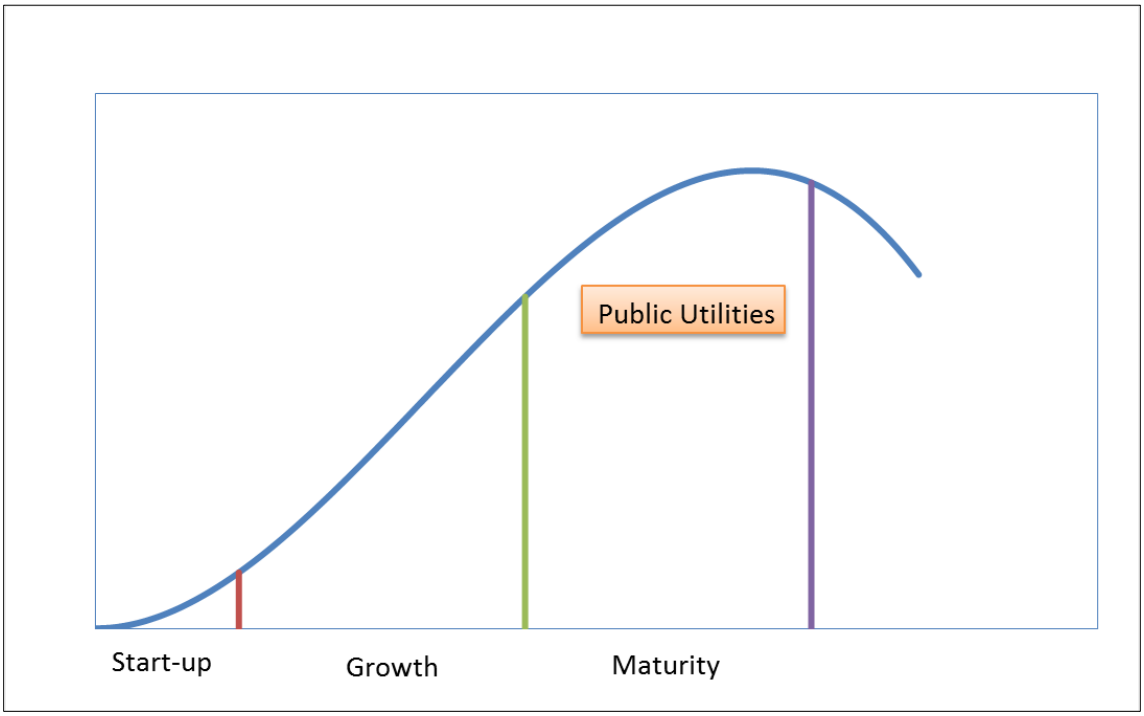
A. Although the DCF Model directly considers the growth of dividends, there are a variety of growth determinants that should be considered when estimating growth rates. It should be noted that these various growth determinants are used primarily to determine the short-term growth rates in multi-stage DCF models. For utility companies, it is necessary to focus primarily on long-term growth rates, which are discussed in the following section. That is not to say that these growth determinants cannot be considered when estimating long-term growth; however, as discussed below, long-term growth must be constrained much more than short-term growth, especially for young firms with high growth opportunities.

Q. Describe what is meant by long-term growth.

A. In order to make the DCF Model a viable, practical model, an infinite stream of future cash flows must be estimated and then discounted back to the present. Otherwise, each annual cash flow would have to be estimated separately. Some analysts use "multi-stage" DCF Models to estimate the value of high-growth firms through two or more stages of growth, with the final stage of growth being constant. However, it is not necessary to use multi-stage DCF Models to analyze the cost of equity of regulated utility companies. This is

because regulated utilities, generally speaking, are already in their "terminal," low growth stage. Unlike most competitive firms, the growth of regulated utilities is constrained by physical service territories and limited primarily by ratepayer and load growth within those territories. The figure below illustrates the well-known business/industry life-cycle pattern.

Figure 6:
Industry Life Cycle



In an industry's early stages, there are ample opportunities for growth and profitable reinvestment. In the maturity stage however, growth opportunities diminish, and firms choose to pay out a larger portion of their earnings in the form of dividends instead of reinvesting them in operations to pursue further growth opportunities. Once a firm is in the maturity stage, it is not necessary to consider higher short-term growth metrics in multi-

stage DCF Models; rather, it is sufficient to analyze the cost of equity using a stable growth DCF Model with one terminal, long-term growth rate.

Q. Is it true that the aggregate growth rate of the economy could be seen as a limiting factor for the terminal growth rate in the DCF Model?

A. Yes. A fundamental concept in finance is that no firm can grow forever at a rate higher than the growth rate of the economy in which it operates.[39] Thus, the terminal growth rate used in the DCF Model should not exceed the aggregate economic growth rate. This is especially true when the DCF Model is conducted on public utilities because these firms have defined service territories. As stated by Dr. Damodaran: "[i]f a firm is a purely domestic company, either because of internal constraints . . . or external constraints (such as those imposed by a government), the growth rate in the domestic economy will be the limiting value."[40]

In fact, it is reasonable to assume that a regulated utility would grow at a rate that is <u>less</u> than the U.S. economic growth rate. Unlike competitive firms, which might increase their growth by launching a new product line, franchising, or expanding into new and developing markets, utility operating companies with defined service territories cannot do any of these things to grow. Gross Domestic Product ("GDP") is one of the most widely used measures of economic production and is used to measure aggregate economic growth. According to the Congressional Budget Office's Budget Outlook, the long-term forecast for nominal U.S. GDP growth is about 4%, which includes an inflation rate of 2%.[41] For

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[39] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 306 (3rd ed., John Wiley & Sons, Inc. 2012).

[40] *Id.*

[41] Congressional Budget Office Long-Term Budget Outlook, https://www.cbo.gov/publication/51580.

mature companies in mature industries, such as utility companies, the terminal growth rate will likely fall between the expected rate of inflation and the expected rate of nominal GDP growth. Thus, Aqua's terminal growth rate is likely between 2% and 4%.

Q. Do water utilities have unique growth opportunities that most electric and gas utilities do not have?

A. Yes. Water utilities are in a unique position to adopt growth strategies which include the potential acquisition of many smaller water and wastewater systems from various municipalities and other localized government entities. My analysis of the dividend yields of the proxy group shows that these companies are likely retaining more capital in order to pursue these types of growth strategies.

Q. Given these unique growth opportunities, did you consider some of the projected growth rates outlined in Mr. Moul's testimony when determining the growth rate to use in your DCF Model?

A. Yes. In this case, I considered some of the historical and projected growth rates outlined in Mr. Moul's testimony. While these growth rates are higher than what should typically be used for the terminal growth rate in the DCF Model, I considered them in this case given the water proxy group's unique growth opportunities relative to electric and gas utilities.

Q. Describe the growth rate input used in your DCF Model.

A. I considered various qualitative determinants of growth for Aqua, along with the maximum allowed growth rate under basic principles of finance and economics. The following chart in the figure below shows three of the long-term growth determinants discussed in this section.[42]

[42] Exhibit DJG-5.

Figure 7:
Terminal Growth Rate Determinants

Terminal Growth Determinants	Rate
Nominal GDP	3.8%
Real GDP	1.8%
Inflation	2.0%
Projected Growth Rate	6.3%
Risk Free Rate	2.0%
Highest	**6.3%**

For the long-term growth rate in my DCF model, I selected the maximum, reasonable long-term growth rate of 6.3%, which means my model assumes that Aqua's qualitative growth in earnings will exceed the nominal growth rate of the entire U.S. economy over the long run – a very charitable assumption. This growth rate is the average I/B/E/S projected earnings growth rate, as outlined in Mr. Moul's testimony.[43]

Q. Please describe the final results of your DCF Model.

A. I used the Quarterly Approximation DCF Model discussed above to estimate Aqua's cost of equity capital. I obtained an average of reported dividends and stock prices from the proxy group, and I used a reasonable terminal growth rate estimate for Aqua. My DCF Model cost of equity estimate for Aqua is 8.0%.[44] This result is at the higher end of a cost of equity range that could be considered reasonable, given the fact that it incorporates

[43] *See* Aqua Exhibit 4-A, Sch. 9.

[44] Exhibit DJG-6.

terminal growth rates that are notably higher than U.S. GDP growth. It is also relatively higher than the results of the market-based CAPM, which is further discussed below. Nonetheless, an awarded ROE of 8.0% based on the results of my DCF Model would be reasonable in this case.

D. Response to Mr. Moul's DCF Model

Q. Mr. Moul's DCF Model yielded a notably higher result. Did you find any problems with his analysis?

A. Yes. Mr. Moul's market value DCF Model produced a base cost of equity result of 9.0%, however, after adding an additional premium based on the Hamada Model, Mr. Moul proposes a DCF result of 11.78%.[45]

Q. Do you agree with Mr. Moul's application of the DCF Model?

A. No. In this case, the most problematic part of Mr. Moul's DCF Model is his use of the Hamada formula to add a 2.34% "leverage adjustment" to his DCF results.[46]

Q. What is the premise of the Hamada formula??

A. The Hamada formula can be used to analyze changes in a firm's cost of capital as it adds or reduces financial leverage, or debt, in its capital structure by starting with an "unlevered" beta and then "relevering" the beta at different debt ratios. As leverage increases, equity investors bear increasing amounts of risk, leading to higher betas. Before the effects of financial leverage can be accounted for, however, the effects of leverage must first be

[45] Aqua Exhibit 4-A, Sch. 1.

[46] *See id*.

removed, which is accomplished through the Hamada formula. The Hamada formula for unlevering beta is stated as follows:[47]

Equation 3:
Hamada Formula

$$\beta_U = \frac{\beta_L}{\left[1 + (1 - T_c)\left(\frac{D}{E}\right)\right]}$$

where:	β_U	=	*unlevered beta (or "asset" beta)*
	β_L	=	*average levered beta of proxy group*
	T_C	=	*corporate tax rate*
	D	=	*book value of debt*
	E	=	*book value of equity*

Using this equation, the beta for the firm can be unlevered, and then "relevered" based on various debt ratios (by rearranging this equation to solve for β_L).

Q. Did Mr. Moul apply the Hamada formula correctly?

A. No. Mr. Moul's application of the Hamada formula is incorrect. I conducted the Hamada Model and present my results in my exhibits.[48] Using the Company's proposed capital structure and a tax rate of 21% (the same used by Mr. Moul), I calculate an unlevered beta of 0.47. When that beta is relevered to my proposed debt ratio of 50%, I calculate a cost of equity of 6.7%, which is close to my CAPM result of 6.4%.[49] The results of my Hamada calculation are shown in the table below.

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[47] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 197 (3rd ed., John Wiley & Sons, Inc. 2012). This formula was originally developed by Hamada in 1972.

[48] Exhibit DJG-17.

[49] *See id.*

Figure 8:
Terminal Growth Rate Determinants

Unlevering Beta		
Proposed Debt Ratio	46%	[1]
Proposed Equity Ratio	54%	[2]
Debt / Equity Ratio	85%	[3]
Tax Rate	21%	[4]
Equity Risk Premium	5.5%	[5]
Risk-free Rate	2.0%	[6]
Proxy Group Beta	0.79	[7]
Unlevered Beta	0.47	[8]

[9]	[10]	[11]	[12]
Relevered Betas and Cost of Equity Estimates			
Debt Ratio	D/E Ratio	Levered Beta	Cost of Equity
0%	0%	0.474	4.63%
20%	25%	0.568	5.14%
30%	43%	0.635	5.51%
40%	67%	0.724	6.00%
50%	100%	0.849	6.69%
55%	122%	0.932	7.14%
60%	150%	1.036	7.72%

While the Hamada formula can be a valuable exercise in certain applications, it does not have any meaningful impact on the cost of equity or fair awarded ROE in this case.

Q. How does your result compare to Mr. Moul's application of the Hamada formula?

A. As demonstrated above, the Hamada formula should have no significant impact on the cost of equity estimate in this case (less than 50 basis points). However, Mr. Moul uses the Hamada formula in an attempt to justify adding 234 basis points to his base DCF results. There are several problems with Mr. Moul's Hamada formula, including the use of an

overestimated risk-free rate and equity risk premium (discussed further in the CAPM section below). However, the most egregious problem is his input for beta. Mr. Moul calculates a relevered beta of 1.07, which implies that Aqua is *riskier* than the average company in the competitive marketplace (which would have a beta of 1.0). This is a completely unreasonable assumption. A proper and accurate unlevered beta calculation shows an unlevered beta of only 0.47.[50] Mr. Moul proposes a debt ratio of 46%, while I propose a debt ratio of 50%. However, Mr. Moul's Hamada formula is based on a debt ratio of only 28%, which effectively skews the results higher.[51] It is unclear whether this is a mathematical error or an upwardly biased decision on the part of Mr. Moul. Either way, it causes the results to be inaccurate. Mr. Moul's 234 basis point increase based on his inaccurate and incorrect use of the Hamada formula should be rejected.

VII. CAPM ANALYSIS

Q. Describe the CAPM.

A. The CAPM is a market-based model founded on the principle that investors expect higher returns for incurring additional risk.[52] The CAPM estimates this expected return. The various assumptions, theories, and equations involved in the CAPM are discussed further in Appendix B. Using the CAPM to estimate the cost of equity of a regulated utility is consistent with the legal standards governing the fair rate of return. The U.S. Supreme Court has recognized that "the amount of risk in the business is a most important factor"

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[50] Exhibit DJG-17.

[51] Aqua Exhibit 4-A, Sch. 10.

[52] William F. Sharpe, *A Simplified Model for Portfolio Analysis* 277–93 (Management Science IX 1963).

in determining the allowed rate of return,[53] and that "the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."[54] The CAPM is a useful model because it directly considers the amount of risk inherent in a business. It is arguably the strongest of the models usually presented in rate cases because, unlike the DCF Model, the CAPM directly measures the most important component of a fair rate of return analysis – risk.

Q. Describe the inputs for the CAPM.

A. The basic CAPM equation requires only three inputs to estimate the cost of equity: (1) the risk-free rate; (2) the beta coefficient; and (3) the equity risk premium. Here is the CAPM formula:

Equation 4:
Basic CAPM

$$\textbf{Cost of Equity} = \textbf{Risk-free Rate} + (\textbf{Beta} \times \textbf{Equity Risk Premium})$$

Each input is discussed separately below.

A. The Risk-Free Rate

Q. Explain the risk-free rate.

A. The first term in the CAPM is the risk-free rate (R_F). The risk-free rate is simply the level of return investors can achieve without assuming any risk. The risk-free rate represents the bare minimum return that any investor would require on a risky asset. Even though no investment is technically void of risk, investors often use U.S. Treasury securities to

[53] *Wilcox*, 212 U.S. at 48.

[54] *Hope Natural Gas Co*., 320 U.S. at 603.

represent the risk-free rate because they accept that those securities essentially contain no default risk. The Treasury issues securities with different maturities, including short-term Treasury Bills, intermediate-term Treasury Notes, and long-term Treasury Bonds.

Q. Is it preferable to use the yield on long-term Treasury bonds for the risk-free rate in the CAPM?

A. Yes. In valuing an asset, investors estimate cash flows over long periods of time. Common stock is viewed as a long-term investment, and the cash flows from dividends are assumed to last indefinitely. Thus, short-term Treasury Bill yields are rarely used in the CAPM to represent the risk-free rate. Short-term rates are subject to greater volatility and thus can lead to unreliable estimates. Instead, long-term Treasury bonds are usually used to represent the risk-free rate in the CAPM. I considered a 30-day average of daily Treasury yield curve rates on 30-year Treasury Bonds in my risk-free rate estimate, which resulted in a risk-free rate of 2.02%.[55]

B. <u>The Beta Coefficient</u>

Q. How is the beta coefficient used in this model?

A. As discussed above, beta represents the sensitivity of a given security to movements in the overall market. The CAPM states that in efficient capital markets, the expected risk premium on each investment is proportional to its beta. Recall that a security with a beta greater (or less) than one is more (or less) risky than the market portfolio. An index such as the S&P 500 Index is used as a proxy for the market portfolio. The historical betas for publicly traded firms are published by various institutional analysts. Beta may also be

[55] Exhibit DJG-7.

calculated through a linear regression analysis, which provides additional statistical information about the relationship between a single stock and the market portfolio. As discussed above, beta also represents the sensitivity of a given security to the market as a whole. The market portfolio of all stocks has a beta equal to one. Stocks with betas greater than 1.0 are relatively more sensitive to market risk than the average stock. For example, if the market increases (or decreases) by 1.0%, a stock with a beta of 1.5 will, on average, increase (or decrease) by 1.5%. In contrast, stocks with betas of less than 1.0 are less sensitive to market risk. For example, if the market increases (or decreases) by 1.0%, a stock with a beta of 0.5 will, on average, only increase (or decrease) by 0.5%.

Q. Describe the source for the betas you used in your CAPM analysis.

A. I used betas recently published by Value Line Investment Survey. The beta for each proxy company used in Mr. Moul's proxy group is less than 1.0. Thus, we have an objective measure to prove the well-known concept that utility stocks are less risky than the average stock in the market. While there is evidence suggesting that betas published by sources such as Value Line may actually overestimate the risk of utilities (and thus overestimate the CAPM), I used the betas published by Value Line to be conservative.[56]

C. <u>The ERP</u>

Q. Describe the Equity Risk Premium ("ERP").

A. The final term of the CAPM is the ERP, which is the required return on the market portfolio less the risk-free rate ($R_M - R_F$). In other words, the ERP is the level of return investors

[56] Exhibit DJG-8; *see also* Appendix B for a more detailed discussion of raw beta calculations and adjustments.

expect above the risk-free rate in exchange for investing in risky securities. Many experts would agree that "the single most important variable for making investment decisions is the equity risk premium."[57] Likewise, the ERP is arguably the single most important factor in estimating the cost of capital in this matter. There are three basic methods that can be used to estimate the ERP: (1) calculating a historical average; (2) taking a survey of experts; and (3) calculating the implied ERP. I will discuss each method in turn, noting advantages and disadvantages of these methods.

1. <u>Historical Average</u>

Q. Describe the historical ERP.

A. The historical ERP may be calculated by simply taking the difference between returns on stocks and returns on government bonds over a certain period of time. Many practitioners rely on the historical ERP as an estimate for the forward-looking ERP because it is easy to obtain. However, there are disadvantages to relying on the historical ERP.

Q. What are the limitations of relying solely on a historical average to estimate the current or forward-looking ERP?

A. Many investors use the historic ERP because it is convenient and easy to calculate. What matters in the CAPM model, however, is not the actual risk premium from the past, but rather the current and forward-looking risk premium.[58] Some investors may think that a historic ERP provides some indication of the prospective risk premium; however, there is empirical evidence to suggest the prospective, forward-looking ERP is actually <u>lower</u> than

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[57] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 4 (Princeton University Press 2002).

[58] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 330 (3rd ed., South Western Cengage Learning 2010).

the historical ERP. In a landmark publication on risk premiums around the world, *Triumph of the Optimists*, the authors suggest through extensive empirical research that the prospective ERP is lower than the historical ERP.[59] This is due in large part to what is known as "survivorship bias" or "success bias" – a tendency for failed companies to be excluded from historical indices.[60] From their extensive analysis, the authors make the following conclusion regarding the prospective ERP: "[t]he result is a forward-looking, geometric mean risk premium for the United States . . . of around 2½ to 4 percent and an arithmetic mean risk premium . . . that falls within a range from a little below 4 to a little above 5 percent."[61] Indeed, these results are lower than many reported historical risk premiums. Other noted experts agree:

> The historical risk premium obtained by looking at U.S. data is biased upwards because of survivor bias. . . . The true premium, it is argued, is much lower. This view is backed up by a study of large equity markets over the twentieth century (*Triumph of the Optimists*), which concluded that the historical risk premium is closer to 4%.[62]

Regardless of the variations in historic ERP estimates, many scholars and practitioners agree that simply relying on a historic ERP to estimate the risk premium going forward is

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[59] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 194 (3rd ed., South Western Cengage Learning 2010).

[60] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 34 (Princeton University Press 2002).

[61] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 194 (Princeton University Press 2002).

[62] Aswath Damodaran, *Equity Risk Premiums: Determinants, Estimation and Implications – The 2015 Edition* 17 (New York University 2015).

not ideal. Fortunately, "a naïve reliance on long-run historical averages is not the only approach for estimating the expected risk premium."[63]

Q. Did you rely on the historical ERP as part of your CAPM analysis in this case?

A. No. Due to the limitations of this approach, I relied on the ERP reported in expert surveys and the implied ERP method discussed below.

2. <u>Expert Surveys</u>

Q. Describe the expert survey approach to estimating the ERP.

A. As its name implies, the expert survey approach to estimating the ERP involves conducting a survey of experts including professors, analysts, chief financial officers, and other executives around the country and asking them what they think the ERP is. The IESE Business School conducts a periodic survey that asks experts around the country about their opinions on the ERP. Their 2020 expert survey reported an average ERP of 5.5%.[64]

3. <u>Implied ERP</u>

Q. Describe the implied ERP approach.

A. The third method of estimating the ERP is arguably the best. The implied ERP relies on the stable growth model proposed by Gordon, often called the "Gordon Growth Model," which is a basic stock valuation model widely used in finance for many years.[65] This model

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[63] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 330 (3rd ed., South Western Cengage Learning 2010).

[64] Pablo Fernandez, Eduardo de Apellaniz and Javier F. Acin, *Market Risk Premium and Risk-Free Rate used for 81 countries in 2020,* at 3 (IESE Business School 2015), copy available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3560869. IESE Business School is the graduate business school of the University of Navarra. IESE offers Master of Business Administration (MBA), Executive MBA and Executive Education programs. IESE is consistently ranked among the leading business schools in the world.

[65] Myron J. Gordon and Eli Shapiro, *Capital Equipment Analysis: The Required Rate of Profit* 102–10 (Management Science Vol. 3, No. 1 Oct. 1956).

is a mathematical derivation of the DCF Model. In fact, the underlying concept in both models is the same: the current value of an asset is equal to the present value of its future cash flows. Instead of using this model to determine the discount rate of one company, we can use it to determine the discount rate for the entire market by substituting the inputs of the model. Specifically, instead of using the current stock price (P_0), we will use the current value of the S&P 500 (V_{500}). Similarly, instead of using the dividends of a single firm, we will consider the dividends paid by the entire market. Additionally, we should consider potential dividends. In other words, stock buybacks should be considered in addition to paid dividends, as stock buybacks represent another way for the firm to transfer free cash flow to shareholders. Focusing on dividends alone without considering stock buybacks could understate the cash flow component of the model, and ultimately understate the implied ERP. The market dividend yield plus the market buyback yield gives us the gross cash yield to use as our cash flow in the numerator of the discount model. This gross cash yield is increased each year over the next five years by the growth rate. These cash flows must be discounted to determine their present value. The discount rate in each denominator is the risk-free rate (R_F) plus the discount rate (K). The following formula shows how the implied return is calculated. Since the current value of the S&P is known, we can solve for K: the implied market return.[66]

[66] *See* Exhibit DJG-9 for detailed calculation.

Equation 5:
Implied Market Return

$$V_{500} = \frac{CY_1(1+g)^1}{(1+R_F+K)^1} + \frac{CY_2(1+g)^2}{(1+R_F+K)^2} + \cdots + \frac{CY_5(1+g)^5 + TV}{(1+R_F+K)^5}$$

where:

V_{500}	=	*current value of index (S&P 500)*
$CY_{1\text{-}5}$	=	*average cash yield over last five years (includes dividends and buybacks)*
g	=	*compound growth rate in earnings over last five years*
R_F	=	*risk-free rate*
K	=	*implied market return (this is what we are solving for)*
TV	=	*terminal value* $= CY_5\,(1+R_F) / K$

The discount rate is called the "implied" return here because it is based on the current value of the index as well as the value of free cash flow to investors projected over the next five years. Thus, based on these inputs, the market is "implying" the expected return; or in other words, based on the current value of all stocks (the index price), and the projected value of future cash flows, the market is telling us the return expected by investors for investing in the market portfolio. After solving for the implied market return (K), we simply subtract the risk-free rate from it to arrive at the implied ERP.

Equation 6:
Implied Equity Risk Premium

$$Implied\ Expected\ Market\ Return - R_F = Implied\ ERP$$

Q. Discuss the results of your implied ERP calculation.

A. After collecting data for the index value, operating earnings, dividends, and buybacks for the S&P 500 over the past six years, I calculated the dividend yield, buyback yield, and gross cash yield for each year. I also calculated the compound annual growth rate (g) from operating earnings. I used these inputs, along with the risk-free rate and current value of the index to calculate a current expected return on the entire market of 7.5%. I subtracted

the risk-free rate to arrive at the implied equity risk premium of 5.0%.[67] Dr. Damodaran, one of the world's leading experts on the ERP, promotes the implied ERP method discussed above. He calculates monthly and annual implied ERPs with this method and publishes his results. Dr. Damodaran's highest ERP estimate for October 2020 using several implied ERP variations was 5.2%.[68]

Q. What are the results of your final ERP estimate?

A. For the final ERP estimate I used in my CAPM analysis, I considered the results of the ERP surveys along with the implied ERP calculations and the ERP reported by Duff & Phelps.[69] The results are presented in the following figure:

Figure 9:
Equity Risk Premium Results

IESE Business School Survey	5.5%
Duff & Phelps Report	5.5%
Damodaran (average)	5.2%
Garrett	4.9%
Average	**5.3%**
Highest	**5.5%**

In the interest of reasonableness, I used the highest ERP estimate out of these results in my CAPM calculation.

[67] Exhibit DJG-9.

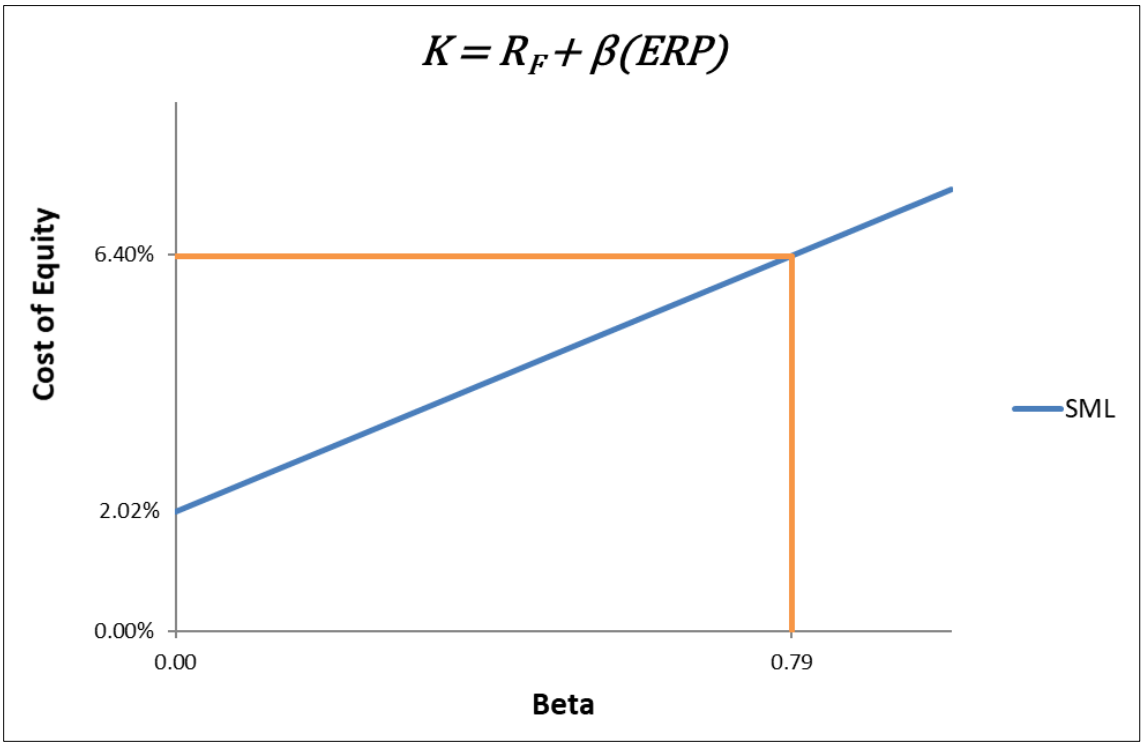
[68] Aswath Damodaran, *Implied Equity Risk Premium Update*, DAMODARAN ONLINE (last visited Nov. 2, 2020) http://pages.stern.nyu.edu/~adamodar/.

[69] Exhibit DJG-10.

Q. Please explain the final results of your CAPM analysis.

A. Using the inputs for the risk-free rate, beta coefficient, and ERP discussed above, I estimate that Aqua's CAPM cost of equity is 6.4%.[70] The CAPM may be displayed graphically through what is known as the Security Market Line ("SML"). The following figure shows the expected return (cost of equity) on the y-axis, and the average beta for the proxy group on the x-axis. The SML intercepts the y-axis at the level of the risk-free rate. The slope of the SML is the equity risk premium.

Figure 10:
CAPM Graph



[70] Exhibit DJG-11.

The SML provides the rate of return that will compensate investors for the beta risk of that investment. Thus, at an average beta of 0.79 for the proxy group, the estimated CAPM cost of equity for Aqua is 6.4%.

D. Response to Mr. Moul's CAPM Analysis

Q. Mr. Moul's CAPM analysis yields notably higher results. Did you find specific problems with Mr. Moul's CAPM assumptions and inputs?

A. Yes, I did. Mr. Moul's base CAPM cost of equity result is 13.4%, which is considerably higher than my estimate. Mr. Moul uses the same beta of 1.07 that he uses in his leverage adjustment to the DCF Model discussed above, instead of using betas published by Value Line, which are much lower. Mr. Moul also adds a size premium to his CAPM result.

Q. Do you agree with Mr. Moul's CAPM results?

A. No. A CAPM result of 13.4% is so unreasonably high that it must be considered an erroneous result rather than a mere overestimation. Mr. Moul uses a risk-free rate of 2.75%, which is about 75 basis points higher than the current yield on 30-year Treasury bonds. He also uses a beta of 1.07, whereas Value Line's average beta for the proxy group is only 0.79.[71] As discussed above, even if the Hamada formula is properly applied, a relevered beta for Aqua might be as high as 0.85; however, Mr. Moul's beta assumes that Aqua is *riskier* than the average firm in the U.S. market, which is a highly unreasonable assumption.

[71] Exhibit DJG-8.

Q. Describe Mr. Moul's size premium adjustment to his CAPM.

A. Mr. Moul adds 1.02% to his CAPM, despite acknowledging that the Company is fairly similar to the average size of the proxy group.[72]

Q. Do you agree with Mr. Moul's size premium?

A. No. The "size effect" phenomenon arose from a 1981 study conducted by Banz, which found that "in the 1936 – 1975 period, the common stock of small firms had, on average, higher risk-adjusted returns than the common stock of large firms."[73] According to Ibbotson, Banz's size effect study was "[o]ne of the most remarkable discoveries of modern finance."[74] Perhaps there was some merit to this idea at the time, but the size effect phenomenon was short lived. Banz's 1981 publication generated much interest in the size effect and spurred the launch of significant new small cap investment funds. However, this "honeymoon period lasted for approximately two years. . . ." [75] After 1983, U.S. small-cap stocks actually underperformed relative to large cap stocks. In other words, the size effect essentially reversed. In *Triumph of the Optimists*, the authors conducted an extensive empirical study of the size effect phenomenon around the world. They found that after the size effect phenomenon was discovered in 1981, it disappeared within a few years:

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[72] Direct Testimony of Paul R. Moul, p. 14, lines 23-25.

[73] Rolf W. Banz, *The Relationship Between Return and Market Value of Common Stocks* 3-18 (Journal of Financial Economics 9 (1981)). http://business.unr.edu/faculty/liuc/files/BADM742/Banz_sizeeffect_1980.pdf

[74] 2015 Ibbotson Stocks, Bonds, Bills, and Inflation Classic Yearbook 99 (Morningstar 2015).

[75] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 131 (Princeton University Press 2002).

> It is clear . . . that there was a global reversal of the size effect in virtually every country, with the size premium not just disappearing but going into reverse. Researchers around the world universally fell victim to Murphy's Law, with the very effect they were documenting – and inventing explanations for – promptly reversing itself shortly after their studies were published.[76]

In other words, the authors assert that the very discovery of the size effect phenomenon likely caused its own demise. The authors ultimately concluded that it is "inappropriate to use the term 'size effect' to imply that we should automatically expect there to be a small-cap premium," yet, this is exactly what utility witnesses often do in attempting to artificially inflate the cost of equity with a size premium. Other prominent sources have agreed that the size premium is a dead phenomenon. According to Ibbotson:

> The unpredictability of small-cap returns has given rise to another argument against the existence of a size premium: that markets have changed so that the size premium no longer exists. As evidence, one might observe the last 20 years of market data to see that the performance of large-cap stocks was basically equal to that of small cap stocks. In fact, large-cap stocks have outperformed small-cap stocks in five of the last 10 years.[77]

In addition to the studies discussed above, other scholars have concluded similar results. According to Kalesnik and Beck:

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[76] *Id*. at 133.

[77] 2015 Ibbotson Stocks, Bonds, Bills, and Inflation Classic Yearbook 112 (Morningstar 2015).

> 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 U.S. long-term size premium is driven by the extreme outliers, which occurred three-quarters of a century ago. . . . Finally, adjusting for biases . . . 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.[78]

For all of these reasons, the Commission should reject the arbitrary size premium proposed by the Company.

VIII. OTHER COST OF EQUITY ISSUES

Q. PLEASE SUMMARIZE MR. MOUL'S POSITION REGARDING MANAGERIAL PERFORMANCE AND ITS IMPACT ON THE COMPANY'S AWARDED ROE.

A. Mr. Moul claims that "The superior performance of [Aqua's] management and the increments that the Commission has added to recognize excellent management performance in prior cases, including [Aqua's], are factors the Commission should consider in assessing all of the evidence presented on the issue of cost of capital in this case."[79] However, Mr. Moul does not specifically quantify an amount that should be added to the awarded ROE.

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[78] Vitali Kalesnik and Noah Beck, *Busting the Myth About Size* (Research Affiliates 2014), available at https://www.researchaffiliates.com/Our%20Ideas/Insights/Fundamentals/Pages/284_Busting_the_Myth_About_Size.aspx (emphasis added).

[79] Aqua St. 7, p. 8, lines 7-11.

Q. DO YOU AGREE WITH MR. MOUL THAT THE COMMISSION SHOULD AWARD AQUA AN ROE THAT RECOGNIZES SUPERIOR MANAGEMENT PERFORMANCE?

A. No. I strongly disagree with Mr. Moul that Aqua's managerial performance is support for awarding an ROE higher than the utility's estimated cost of equity, for several reasons. First, ratepayers should not be obligated to fund an additional wealth transfer to shareholders for Company management doing its job. Second, the testimony of OCA witnesses Roger Colton and Barbara Alexander presents evidence that the Company's performance is not "superior" as concluded by Mr. Moul. Third, since 2015, Mr. Moul has provided cost of capital testimony in 16 rate proceedings for nine different utilities before the Pennsylvania Public Utility Commission.[80] In every case, he recommended that the Commission recognize or adjust the return on equity to provide recognition of exemplary performance of the company's management. Mr. Moul could not recall any cases where he did <u>not</u> assert that the subject utility exhibited "exemplary performance" and "outstanding performance."[81]

Q. ARE THERE FURTHER REASONS WHY AQUA SHOULD NOT RECEIVE A HIGHER ROE DUE TO SUPERIOR MANAGEMENT PERFORMANCE?

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[80] Aqua response to OCA Set XI-10.

[81] *Id.*

A. Yes. The cost of equity determined in this case will be based upon various models utilizing a proxy group of water utilities. These ROE results incorporate the management effectiveness of the various proxy group members. Even if a case could be made that Aqua's managerial performance was superior, such a claim could only support a higher ROE if there was a compelling demonstration that Aqua had superior management to that of the proxy group. Neither Mr. Packer nor Mr. Moul have conducted any comparative analyses of Aqua's management to the management performance of the proxy companies.

IX. CAPITAL STRUCTURE

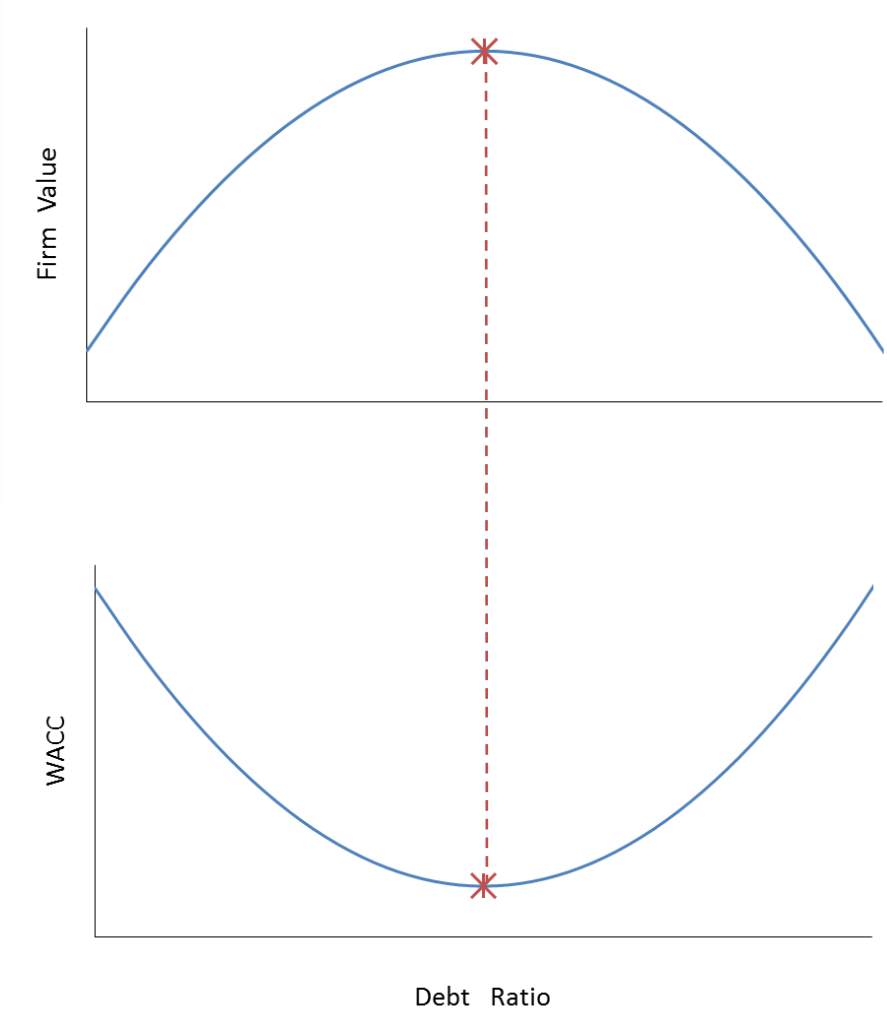
Q. Describe in general the concept of a company's capital structure.

A. "Capital structure" refers to the way a company finances its overall operations through external financing. The primary sources of long-term, external financing are debt capital and equity capital. Debt capital usually comes in the form of contractual bond issues that require the firm to make payments, while equity capital represents an ownership interest in the form of stock. Because a firm cannot pay dividends on common stock until it satisfies its debt obligations to bondholders, stockholders are referred to as "residual claimants." The fact that stockholders have a lower priority to claims on company assets increases their risk and the required return relative to bondholders. Thus, equity capital has a higher cost than debt capital. Firms can reduce their WACC by recapitalizing and increasing their debt financing. In addition, because interest expense is deductible, increasing debt also adds value to the firm by reducing the firm's tax obligation.

Q. Is it true that, by increasing debt, competitive firms can add value and reduce their WACC?

A. Yes, it is. A competitive firm can add value by increasing debt. After a certain point, however, the marginal cost of additional debt outweighs its marginal benefit. This is because the more debt the firm uses, the higher interest expense it must pay, and the likelihood of loss increases. This also increases the risk of non-recovery for both bondholders and shareholders, causing both groups of investors to demand a greater return on their investment. Thus, if debt financing is too high, the firm's WACC will increase instead of decrease. The following figure illustrates these concepts.

Figure 11:
Optimal Debt Ratio



As shown in this figure, a competitive firm's value is maximized when the WACC is minimized. In both graphs, the debt ratio is shown on the x-axis. By increasing its debt ratio, a competitive firm can minimize its WACC and maximize its value. At a certain point, however, the benefits of increasing debt do not outweigh the costs of the additional

risks to both bondholders and shareholders, as each type of investor will demand higher returns for the additional risk they have assumed.[82]

Q. Does the rate base rate of return model effectively incentivize utilities to operate at the optimal capital structure?

A. No. While it is true that competitive firms maximize their value by minimizing their WACC, this is not the case for regulated utilities. Under the rate base rate of return model, a higher WACC results in higher rates, all else held constant. The basic revenue requirement equation is as follows:

Equation 7:
Revenue Requirement for Regulated Utilities

$$RR = O + d + T + \boldsymbol{r}(A - D)$$

where:	RR	=	*revenue requirement*
	O	=	*operating expenses*
	d	=	*depreciation expense*
	T	=	*corporate tax*
	$\boldsymbol{r}$	=	***weighted average cost of capital (WACC)***
	A	=	*plant investments*
	D	=	*accumulated depreciation*

As shown in this equation, utilities can increase their revenue requirement by <u>increasing</u> their WACC, not by minimizing it. Thus, because there is no incentive for a regulated utility to minimize its WACC, a commission standing in the place of competition must ensure that the regulated utility is operating at the lowest reasonable WACC.

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[82] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 440-41 (3rd ed., South Western Cengage Learning 2010).

Q. Can utilities generally afford to have higher debt levels than other industries?

A. Yes. Because regulated utilities have large amounts of fixed assets, stable earnings, and low risk relative to other industries, they can afford to have relatively higher debt ratios (or "leverage"). As aptly stated by Dr. Damodaran:

> Since financial leverage multiplies the underlying business risk, it stands to reason that firms that have high business risk should be reluctant to take on financial leverage. It also stands to reason that firms that operate in stable businesses should be much more willing to take on financial leverage. Utilities, for instance, have historically had high debt ratios but have not had high betas, mostly because their underlying businesses have been stable and fairly predictable.[83]

Note that the author explicitly contrasts utilities with firms that have high underlying business risk. Because utilities have low levels of risk and operate a stable business, they should generally operate with relatively high levels of debt to achieve their optimal capital structure.

Q. What capital structure does Mr. Moul propose for the Company?

A. Mr. Moul proposes a capital structure consisting of 46% debt and 54% equity.[84]

Q. Do you agree with Mr. Moul's proposed imputed capital structure?

A. No. My analysis of the 2020 capital structures of the proxy group shows that the average debt ratio of the proxy group is 50%.[85]

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[83] Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 196 (3rd ed., John Wiley & Sons, Inc. 2012).

[84] Direct Testimony of Paul R. Moul, p. 20, lines 2-4.

[85] Exhibit DJG-14.

Q. What is your recommended equity ratio?

A. I recommend that the Commission impute a capital structure consisting of 50% debt and 50% equity, which is reflective of the capital structures of the proxy group.

Q. Did you also look at the debt ratios observed in other industries to assess the reasonableness of your proposed debt ratio in this case?

A. Yes. There are currently more than 3,000 firms in U.S. industries with higher debt ratios than 50% (my proposed ratemaking debt ratio for Aqua), with an average debt ratio of about 64%.[86] The following figure shows a sample of these industries with debt ratios higher than 56%.

[86] Exhibit DJG-15.

Figure 12:
Competitive Industry with Debt Ratio Sample

Industry	# Firms	Debt Ratio
Financial Svcs. (Non-bank & Insurance)	235	95%
Retail (Building Supply)	15	88%
Hospitals/Healthcare Facilities	32	84%
Air Transport	17	84%
Advertising	61	81%
Hotel/Gaming	66	77%
Brokerage & Investment Banking	39	77%
Auto & Truck	19	75%
Retail (Automotive)	30	74%
Food Wholesalers	18	74%
Retail (Special Lines)	85	72%
Recreation	69	71%
Bank (Money Center)	7	68%
Retail (Grocery and Food)	14	68%
Transportation	21	68%
Computers/Peripherals	52	68%
Packaging & Container	26	67%
Broadcasting	29	65%
Rubber& Tires	3	64%
Beverage (Soft)	41	64%
Chemical (Basic)	48	62%
Oil/Gas Distribution	57	62%
Cable TV	13	**61%**
R.E.I.T.	238	61%
Apparel	51	61%
Trucking	35	61%
Computer Services	116	61%
Retail (Distributors)	85	60%
Telecom (Wireless)	16	**60%**
Power	55	**60%**
Farming/Agriculture	32	59%
Business & Consumer Services	169	59%
Aerospace/Defense	72	59%
Telecom. Services	58	59%
Retail (Online)	75	58%
Utility (General)	16	**58%**
Software (Internet)	36	57%
Household Products	140	57%
Construction Supplies	46	57%
Total / Average	**2,237**	**67%**

Many of the industries shown here, like public utilities, are generally well-established industries with large amounts of capital assets. The shareholders of these industries generally prefer these higher debt ratios in order to maximize their profits. There are several notable industries that are relatively comparable to public utilities. For example, the Cable TV, Telecom, Power, and General Utility industries all have an average debt ratios close to 60%.

Q. Please summarize the results of your capital structure analyses.

A. As described above, I analyzed Aqua's proposed debt ratio under several approaches. The results of my analyses are summarized in the following table:

Figure 13:
Capital Structure Analysis – Summary of Results

Source	Debt Ratio
Cable TV	61%
Telecom (Wireless)	60%
Power	60%
Utility (General)	58%
Proxy Group of Utilities	**50%**
Garrett Proposal	**50%**
Company's Proposal	**46%**

As shown in this figure, Aqua's proposed debt ratio is too low. This results in excessively high capital costs and utility rates due to the simple fact that the cost of equity is much higher than the cost of debt. It is true that an excessively high debt ratio can result in a type of diminishing returns in the form of higher capital costs, but an imputed debt ratio of

50% in this case would lover the overall weighted average cost of capital for Aqua. My analysis indicates that Aqua's debt ratio for ratemaking purposes should be at least 50%. Thus, I recommend the Commission adopt a capital structure for Aqua consisting of 50% debt and 50% equity in the interest of reasonableness.

Q. Does this conclude your testimony?

A. Yes. To the extent I have not addressed an issue or proposal raised by the Company in this proceeding, it should not be construed that I agree with the same.

APPENDIX A:

DISCOUNTED CASH FLOW MODEL THEORY

The Discounted Cash Flow ("DCF") Model is based on a fundamental financial model called the "dividend discount model," which maintains that the value of a security is equal to the present value of the future cash flows it generates. Cash flows from common stock are paid to investors in the form of dividends. There are several variations of the DCF Model. In its most general form, the DCF Model is expressed as follows:[87]

Equation 8:
General Discounted Cash Flow Model

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n}{(1+k)^n}$$

where: P_0 = *current stock price*
$D_1 \ldots D_n$ = *expected future dividends*
k = *discount rate / required return*

The General DCF Model would require an estimation of an infinite stream of dividends. Because this would be impractical, analysts use more feasible variations of the General DCF Model, which are discussed further below.

The DCF Models rely on the following four assumptions:[88]

1. Investors evaluate common stocks in the classical valuation framework; that is, they trade securities rationally at prices reflecting their perceptions of value;

2. Investors discount the expected cash flows at the same rate (K) in every future period;

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[87] *See* Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 410 (9th ed., McGraw-Hill/Irwin 2013).

[88] *See* Roger A. Morin, *New Regulatory Finance* 252 (Public Utilities Reports, Inc. 2006) (1994).

3. The K obtained from the DCF equation corresponds to that specific stream of future cash flows alone; and

4. Dividends, rather than earnings, constitute the source of value.

The General DCF can be rearranged to make it more practical for estimating the cost of equity. Regulators typically rely on some variation of the Constant Growth DCF Model, which is expressed as follows:

Equation 9:
Constant Growth Discounted Cash Flow Model

$$K = \frac{D_1}{P_0} + g$$

where:	K	=	*discount rate / required return on equity*
	D_1	=	*expected dividend per share one year from now*
	P_0	=	*current stock price*
	g	=	*expected growth rate of future dividends*

Unlike the General DCF Model, the Constant Growth DCF Model solves for the required return (K) directly. In addition, by assuming that dividends grow at a constant rate, the dividend stream from the General DCF Model may be substituted with a term representing the expected constant growth rate of future dividends (g). The Constant Growth DCF Model may be considered in two parts. The first part is the dividend yield (D_1/P_0), and the second part is the growth rate (g). In other words, the required return in the DCF Model is equivalent to the dividend yield plus the growth rate.

In addition to the four assumptions listed above, the Constant Growth DCF Model relies on the following four additional assumptions:[89]

[89] *See* Roger A. Morin, *New Regulatory Finance* 254–56 (Public Utilities Reports, Inc. 2006) (1994).

1. The discount rate (K) must exceed the growth rate (g);
2. The dividend growth rate (g) is constant in every year to infinity;
3. Investors require the same return (K) in every year; and
4. There is no external financing; that is, growth is provided only by the retention of earnings.

Because the growth rate in this model is assumed to be constant, it is important not to use growth rates that are unreasonably high. In fact, the constant growth rate estimate for a regulated utility with a defined service territory should not exceed the growth rate for the economy in which it operates.

The basic form of the Constant Growth DCF Model described above is sometimes referred to as the "Annual" DCF Model. This is because the model assumes an annual dividend payment to be paid at the end of every year, as well as an increase in dividends once each year. In reality, however, most utilities pay dividends on a quarterly basis. The Constant Growth DCF equation may be modified to reflect the assumption that investors receive successive quarterly dividends and reinvest them throughout the year at the discount rate. This variation is called the Quarterly Approximation DCF Model.[90]

Equation 10:
Quarterly Approximation Discounted Cash Flow Model

$$K = \left[\frac{d_0(1+g)^{1/4}}{P_0} + (1+g)^{1/4}\right]^4 - 1$$

where: K = *discount rate / required return*
d_0 = *current quarterly dividend per share*
P_0 = *stock price*
g = *expected growth rate of future dividends*

[90] *See* Roger A. Morin, *New Regulatory Finance* 348 (Public Utilities Reports, Inc. 2006) (1994).

The Quarterly Approximation DCF Model assumes that dividends are paid quarterly, and that each dividend is constant for four consecutive quarters. All else held constant, this model results in the highest cost of equity estimate for the utility in comparison to other DCF Models because it accounts for the quarterly compounding of dividends. There are several other variations of the Constant Growth (or Annual) DCF Model, including a Semi-Annual DCF Model, which is used by the Federal Energy Regulatory Commission ("FERC"). These models, along with the Quarterly Approximation DCF Model, have been accepted in regulatory proceedings as useful tools for estimating the cost of equity.

APPENDIX B:

CAPITAL ASSET PRICING MODEL THEORY

The Capital Asset Pricing Model ("CAPM") is a market-based model founded on the principle that investors demand higher returns for incurring additional risk.[91] The CAPM estimates this required return. The CAPM relies on the following assumptions:

1. Investors are rational, risk-adverse, and strive to maximize profit and terminal wealth;
2. Investors make choices based on risk and return. Return is measured by the mean returns expected from a portfolio of assets; risk is measured by the variance of these portfolio returns;
3. Investors have homogenous expectations of risk and return;
4. Investors have identical time horizons;
5. Information is freely and simultaneously available to investors;
6. There is a risk-free asset, and investors can borrow and lend unlimited amounts at the risk-free rate;
7. There are no taxes, transaction costs, restrictions on selling short, or other market imperfections; and
8. Total asset quality is fixed, and all assets are marketable and divisible.[92]

While some of these assumptions may appear to be restrictive, they do not outweigh the inherent value of the model. The CAPM has been widely used by firms, analysts, and regulators for decades to estimate the cost of equity capital.

The basic CAPM equation is expressed as follows:

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[91] William F. Sharpe, *A Simplified Model for Portfolio Analysis* 277-93 (Management Science IX 1963).

[92] *Id*.

Equation 11:
Capital Asset Pricing Model

$$K = R_F + \beta_i(R_M - R_F)$$

where:	K	=	*required return*
	R_F	=	*risk-free rate*
	β	=	*beta coefficient of asset i*
	R_M	=	*required return on the overall market*

There are essentially three terms within the CAPM equation that are required to calculate the required return (K): (1) the risk-free rate (R_F); (2) the beta coefficient (β); and (3) the equity risk premium ($R_M - R_F$), which is the required return on the overall market less the risk-free rate.

Raw Beta Calculations and Adjustments.

A stock's beta equals the covariance of the asset's returns with the returns on a market portfolio, divided by the portfolio's variance, as expressed in the following formula:[93]

Equation 12:
Beta

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2}$$

where:	β_i	=	*beta of asset i*
	σ_{im}	=	*covariance of asset i returns with market portfolio returns*
	σ^2_m	=	*variance of market portfolio*

Betas that are published by various research firms are typically calculated through a regression analysis that considers the movements in price of an individual stock and movements in the price of the overall market portfolio. The betas produced by this regression analysis are considered "raw" betas. There is empirical evidence that raw betas should be adjusted to account

[93] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180–81 (3rd ed., South Western Cengage Learning 2010).

for beta's natural tendency to revert to an underlying mean.[94] Some analysts use an adjustment method proposed by Blume, which adjusts raw betas toward the market mean of one.[95] While the Blume adjustment method is popular due to its simplicity, it is arguably arbitrary, and some would say not useful at all. According to Dr. Damodaran: "While we agree with the notion that betas move toward 1.0 over time, the [Blume adjustment] strikes us as arbitrary and not particularly useful."[96] The Blume adjustment method is especially arbitrary when applied to industries with consistently low betas, such as the utility industry. For industries with consistently low betas, it is better to employ an adjustment method that adjusts raw betas toward an industry average, rather than the market average. Vasicek proposed such a method, which is preferable to the Blume adjustment method because it allows raw betas to be adjusted toward an industry average, and also accounts for the statistical accuracy of the raw beta calculation.[97] In other words, "[t]he Vasicek adjustment seeks to overcome one weakness of the Blume model by not applying the same adjustment to every security; rather, a security-specific adjustment is made depending on the statistical quality of the regression."[98] The Vasicek beta adjustment equation is expressed as follows:

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[94] *See* Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 84–92 (Financial Management Autumn 1990).

[95] See Marshall Blume, *On the Assessment of Risk*, Vol. 26, No. 1 The Journal of Finance 1 (1971).

[96] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 187 (3rd ed., John Wiley & Sons, Inc. 2012).

[97] Oldrich A. Vasicek, *A Note on Using Cross-Sectional Information in Bayesian Estimation of Security Betas* 1233–1239 (Journal of Finance, Vol. 28, No. 5, December 1973).

[98] 2012 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook 77–78 (Morningstar 2012).

Equation 13:
Vasicek Beta Adjustment

$$\beta_{i1} = \frac{\sigma^2_{\beta_{i0}}}{\sigma^2_{\beta 0} + \sigma^2_{\beta_{i0}}}\beta_0 + \frac{\sigma^2_{\beta 0}}{\sigma^2_{\beta 0} + \sigma^2_{\beta_{i0}}}\beta_{i0}$$

where:	β_{i1}	=	*Vasicek adjusted beta for security i*
	β_{i0}	=	*historical beta for security i*
	β_0	=	*beta of industry or proxy group*
	$\sigma^2_{\beta 0}$	=	*variance of betas in the industry or proxy group*
	$\sigma^2_{\beta i0}$	=	*square of standard error of the historical beta for security i*

The Vasicek beta adjustment is an improvement on the Blume model because the Vasicek model does not apply the same adjustment to every security. A higher standard error produced by the regression analysis indicates a lower statistical significance of the beta estimate. Thus, a beta with a high standard error should receive a greater adjustment than a beta with a low standard error. As stated in Ibbotson:

> While the Vasicek formula looks intimidating, it is really quite simple. The adjusted beta for a company is a weighted average of the company's historical beta and the beta of the market, industry, or peer group. How much weight is given to the company and historical beta depends on the statistical significance of the company beta statistic. If a company beta has a low standard error, then it will have a higher weighting in the Vasicek formula. If a company beta has a high standard error, then it will have lower weighting in the Vasicek formula. An advantage of this adjustment methodology is that it does not force an adjustment to the market as a whole. Instead, the adjustment can be toward an industry or some other peer group. <u>This is most useful in looking at companies in industries that on average have high or low betas</u>.[99]

Thus, the Vasicek adjustment method is statistically more accurate and is the preferred method to use when analyzing companies in an industry that has inherently low betas, such as the utility industry. The Vasicek method was also confirmed by Gombola, who conducted a study

[99] 2012 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook 78 (Morningstar 2012).

specifically related to utility companies. Gombola concluded that "[t]he strong evidence of auto-regressive tendencies in utility betas lends support to the application of adjustment procedures such as the . . . adjustment procedure presented by Vasicek."[100] Gombola also concluded that adjusting raw betas toward the market mean of 1.0 is too high, and that "[i]nstead, they should be adjusted toward a value that is less than one."[101] In conducting the Vasicek adjustment on betas in previous cases, it reveals that utility betas are even lower than those published by Value Line.[102] Gombola's findings are particular important here, because his study was conducted specifically on utility companies. This evidence indicates that using Value Line's betas in a CAPM cost of equity estimate for a utility company may lead to overestimated results. Regardless, adjusting betas to a level that is higher than Value Line's betas is not reasonable, and it would produce CAPM cost of equity results that are too high.

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[100] Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 92 (Financial Management Autumn 1990) (emphasis added).

[101] Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 91–92 (Financial Management Autumn 1990) (emphasis added).

[102] *See e.g.* Responsive Testimony of David J. Garrett, filed March 21, 2016 in Cause No. PUD 201500273 before the Corporation Commission of Oklahoma (OG&E's 2015 rate case), at pp. 56–59.

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EDUCATION

University of Oklahoma — Norman, OK
Master of Business Administration — 2014
Areas of Concentration: Finance, Energy

University of Oklahoma College of Law — Norman, OK
Juris Doctor — 2007
Member, American Indian Law Review

University of Oklahoma — Norman, OK
Bachelor of Business Administration — 2003
Major: Finance

PROFESSIONAL DESIGNATIONS

Society of Depreciation Professionals
Certified Depreciation Professional (CDP)

Society of Utility and Regulatory Financial Analysts
Certified Rate of Return Analyst (CRRA)

The Mediation Institute
Certified Civil / Commercial & Employment Mediator

WORK EXPERIENCE

Resolve Utility Consulting PLLC — Oklahoma City, OK
Managing Member — 2016 – Present
Provide expert analysis and testimony specializing in depreciation and cost of capital issues for clients in utility regulatory proceedings.

Oklahoma Corporation Commission — Oklahoma City, OK
Public Utility Regulatory Analyst — 2012 – 2016
Assistant General Counsel — 2011 – 2012
Represented commission staff in utility regulatory proceedings and provided legal opinions to commissioners. Provided expert analysis and testimony in depreciation, cost of capital, incentive compensation, payroll and other issues.

Perebus Counsel, PLLC — Oklahoma City, OK
Managing Member — 2009 – 2011
Represented clients in the areas of family law, estate planning, debt negotiations, business organization, and utility regulation.

Moricoli & Schovanec, P.C. — Oklahoma City, OK
Associate Attorney — 2007 – 2009
Represented clients in the areas of contracts, oil and gas, business structures and estate administration.

TEACHING EXPERIENCE

University of Oklahoma — Norman, OK
Adjunct Instructor – "Conflict Resolution" — 2014 – 2020
Adjunct Instructor – "Ethics in Leadership"

Rose State College — Midwest City, OK
Adjunct Instructor – "Legal Research" — 2013 – 2015
Adjunct Instructor – "Oil & Gas Law"

PUBLICATIONS

American Indian Law Review — Norman, OK
"Vine of the Dead: Reviving Equal Protection Rites for Religious Drug Use" — 2006
(31 Am. Indian L. Rev. 143)

PROFESSIONAL ASSOCIATIONS

Oklahoma Bar Association — 2007 – Present

Society of Depreciation Professionals — 2014 – Present
Board Member – President — 2017
Participate in management of operations, attend meetings, review performance, organize presentation agenda.

Society of Utility Regulatory Financial Analysts — 2014 – Present

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Pennsylvania Public Utility Commission	PECO Energy Company	R-2021-3024601	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
New Mexico Public Regulation Commission	Southwestern Public Service Company	20-00238-UT	Cost of capital and authorized rate of return	The New Mexico Large Customer Group; Occidental Permian
Pennsylvania Public Utility Commission	Duquesne Light Company	R-2021-3024750	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Maryland Public Service Commission	Columbia Gas of Maryland	9664	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Indiana Utility Regulatory Commission	Southern Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45447	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 51415	Depreciation rates, service lives, net salvage	Cities Advocating Reasonable Deregulation
New Mexico Public Regulatory Commission	Avangrid, Inc., Avangrid Networks, Inc., NM Green Holdings, Inc., PNM, and PNM Resources	20-00222-UT	Ring fencing and capital structure	The Albuquerque Bernalillo County Water Utility Authority
Indiana Utility Regulatory Commission	Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45468	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of Nevada	Nevada Power Company and Sierra Pacific Power Company, d/b/a NV Energy	20-07023	Construction work in progress	MGM Resorts International, Caesars Enterprise Services, LLC, and the Southern Nevada Water Authority
Massachusetts Department of Public Utilities	Boston Gas Company, d/b/a National Grid	D.P.U. 20-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Public Service Commission of the State of Montana	ABACO Energy Services, LLC	D2020.07.082	Cost of capital and authorized rate of return	Montana Consumer Counsel
Maryland Public Service Commission	Washington Gas Light Company	9651	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Florida Public Service Commission	Utilities, Inc. of Florida	20200139-WS	Cost of capital and authorized rate of return	Florida Office of Public Counsel
New Mexico Public Regulatory Commission	El Paso Electric Company	20-00104-UT	Cost of capital, depreciation rates, net salvage	City of Las Cruces and Doña Ana County

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Public Utilities Commission of Nevada	Nevada Power Company	20-06003	Cost of capital, awarded rate of return, capital structure, earnings sharing	MGM Resorts International, Caesars Enterprise Services, LLC, Wynn Las Vegas, LLC, Smart Energy Alliance, and Circus Circus Las Vegas, LLC
Wyoming Public Service Commission	Rocky Mountain Power	20000-578-ER-20	Cost of capital and authorized rate of return	Wyoming Industrial Energy Consumers
Florida Public Service Commission	Peoples Gas System	20200051-GU 20200166-GU	Cost of capital, depreciation rates, net salvage	Florida Office of Public Counsel
Wyoming Public Service Commission	Rocky Mountain Power	20000-539-EA-18	Depreciation rates, service lives, net salvage	Wyoming Industrial Energy Consumers
Public Service Commission of South Carolina	Dominion Energy South Carolina	2020-125-E	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Pennsylvania Public Utility Commission	The City of Bethlehem	2020-3020256	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Railroad Commission of Texas	Texas Gas Services Company	GUD 10928	Depreciation rates, service lives, net salvage	Gulf Coast Service Area Steering Committee
Public Utilities Commission of the State of California	Southern California Edison	A.19-08-013	Depreciation rates, service lives, net salvage	The Utility Reform Network
Massachusetts Department of Public Utilities	NSTAR Gas Company	D.P.U. 19-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Georgia Public Service Commission	Liberty Utilities (Peach State Natural Gas)	42959	Depreciation rates, service lives, net salvage	Public Interest Advocacy Staff
Florida Public Service Commission	Florida Public Utilities Company	20190155-EI 20190156-EI 20190174-EI	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Illinois Commerce Commission	Commonwealth Edison Company	20-0393	Depreciation rates, service lives, net salvage	The Office of the Illinois Attorney General
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 49831	Depreciation rates, service lives, net salvage	Alliance of Xcel Municipalities
Public Service Commission of South Carolina	Blue Granite Water Company	2019-290-WS	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Railroad Commission of Texas	CenterPoint Energy Resources	GUD 10920	Depreciation rates and grouping procedure	Alliance of CenterPoint Municipalities
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater	A-2019-3009052	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
New Mexico Public Regulation Commission	Southwestern Public Service Company	19-00170-UT	Cost of capital and authorized rate of return	The New Mexico Large Customer Group; Occidental Permian
Indiana Utility Regulatory Commission	Duke Energy Indiana	45253	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Maryland Public Service Commission	Columbia Gas of Maryland	9609	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Washington Utilities & Transportation Commission	Avista Corporation	UE-190334	Cost of capital, awarded rate of return, capital structure	Washington Office of Attorney General
Indiana Utility Regulatory Commission	Indiana Michigan Power Company	45235	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of the State of California	Pacific Gas & Electric Company	18-12-009	Depreciation rates, service lives, net salvage	The Utility Reform Network
Oklahoma Corporation Commission	The Empire District Electric Company	PUD 201800133	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Arkansas Public Service Commission	Southwestern Electric Power Company	19-008-U	Cost of capital, depreciation rates, net salvage	Western Arkansas Large Energy Consumers
Public Utility Commission of Texas	CenterPoint Energy Houston Electric	PUC 49421	Depreciation rates, service lives, net salvage	Texas Coast Utilities Coalition
Massachusetts Department of Public Utilities	Massachusetts Electric Company and Nantucket Electric Company	D.P.U. 18-150	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201800140	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2018.9.60	Depreciation rates, service lives, net salvage	Montana Consumer Counsel and Denbury Onshore

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Indiana Utility Regulatory Commission	Northern Indiana Public Service Company	45159	Depreciation rates, grouping procedure, demolition costs	Indiana Office of Utility Consumer Counselor
Public Service Commission of the State of Montana	NorthWestern Energy	D2018.2.12	Depreciation rates, service lives, net salvage	Montana Consumer Counsel
Oklahoma Corporation Commission	Public Service Company of Oklahoma	PUD 201800097	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Wal-Mart
Nevada Public Utilities Commission	Southwest Gas Corporation	18-05031	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection
Public Utility Commission of Texas	Texas-New Mexico Power Company	PUC 48401	Depreciation rates, service lives, net salvage	Alliance of Texas-New Mexico Power Municipalities
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201700496	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Maryland Public Service Commission	Washington Gas Light Company	9481	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Indiana Utility Regulatory Commission	Citizens Energy Group	45039	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Entergy Texas, Inc.	PUC 48371	Depreciation rates, decommissioning costs	Texas Municipal Group
Washington Utilities & Transportation Commission	Avista Corporation	UE-180167	Depreciation rates, service lives, net salvage	Washington Office of Attorney General
New Mexico Public Regulation Commission	Southwestern Public Service Company	17-00255-UT	Cost of capital and authorized rate of return	HollyFrontier Navajo Refining; Occidental Permian
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 47527	Depreciation rates, plant service lives	Alliance of Xcel Municipalities
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2017.9.79	Depreciation rates, service lives, net salvage	Montana Consumer Counsel
Florida Public Service Commission	Florida City Gas	20170179-GU	Cost of capital, depreciation rates	Florida Office of Public Counsel

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Washington Utilities & Transportation Commission	Avista Corporation	UE-170485	Cost of capital and authorized rate of return	Washington Office of Attorney General
Wyoming Public Service Commission	Powder River Energy Corporation	10014-182-CA-17	Credit analysis, cost of capital	Private customer
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201700151	Depreciation, terminal salvage, risk analysis	Oklahoma Industrial Energy Consumers
Public Utility Commission of Texas	Oncor Electric Delivery Company	PUC 46957	Depreciation rates, simulated analysis	Alliance of Oncor Cities
Nevada Public Utilities Commission	Nevada Power Company	17-06004	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection
Public Utility Commission of Texas	El Paso Electric Company	PUC 46831	Depreciation rates, interim retirements	City of El Paso
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-24	Accelerated depreciation of North Valmy plant	Micron Technology, Inc.
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-23	Depreciation rates, service lives, net salvage	Micron Technology, Inc.
Public Utility Commission of Texas	Southwestern Electric Power Company	PUC 46449	Depreciation rates, decommissioning costs	Cities Advocating Reasonable Deregulation
Massachusetts Department of Public Utilities	Eversource Energy	D.P.U. 17-05	Cost of capital, capital structure, and rate of return	Sunrun Inc.; Energy Freedom Coalition of America
Railroad Commission of Texas	Atmos Pipeline - Texas	GUD 10580	Depreciation rates, grouping procedure	City of Dallas
Public Utility Commission of Texas	Sharyland Utility Company	PUC 45414	Depreciation rates, simulated analysis	City of Mission
Oklahoma Corporation Commission	Empire District Electric Company	PUD 201600468	Cost of capital, depreciation rates	Oklahoma Industrial Energy Consumers
Railroad Commission of Texas	CenterPoint Energy Texas Gas	GUD 10567	Depreciation rates, simulated plant analysis	Texas Coast Utilities Coalition

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Arkansas Public Service Commission	Oklahoma Gas & Electric Company	160-159-GU	Cost of capital, depreciation rates, terminal salvage	Arkansas River Valley Energy Consumers; Wal-Mart
Florida Public Service Commission	Peoples Gas	160-159-GU	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Arizona Corporation Commission	Arizona Public Service Company	E-01345A-16-0036	Cost of capital, depreciation rates, terminal salvage	Energy Freedom Coalition of America
Nevada Public Utilities Commission	Sierra Pacific Power Company	16-06008	Depreciation rates, net salvage, theoretical reserve	Northern Nevada Utility Customers
Oklahoma Corporation Commission	Oklahoma Gas & Electric Co.	PUD 201500273	Cost of capital, depreciation rates, terminal salvage	Public Utility Division
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201500208	Cost of capital, depreciation rates, terminal salvage	Public Utility Division
Oklahoma Corporation Commission	Oklahoma Natural Gas Company	PUD 201500213	Cost of capital, depreciation rates, net salvage	Public Utility Division

Proxy Group Summary

Company	Ticker	Market Cap. ($ millions)	Market Category	Value Line Safety Rank	Financial Strength
American States Water Co	AWR	3,200	Mid Cap	2	A
American Water Works Co Inc	AWK	31,000	Large Cap	3	B++
Artesian Resources Corp.	ARTNA	361	Small Cap	3	B+
California Water Service Gp	CWT	3,000	Mid Cap	3	B++
Essential Utilities, Inc.	WTRG	11,400	Large Cap	3	B+
Middlesex Water Co	MSEX	1,800	Small Cap	2	B++
SJW Corp	SJW	2,000	Mid Cap	3	B+
York Water Co	YORW	575	Small Cap	3	B+

Value Line Investment Survey

DCF Stock and Index Prices

Exhibit DJG-3

Ticker	^GSPC	AWR	AWK	ARTNA	CWT	WTRG	MSEX	SJW	YORW
30-day Average	4422	88.21	173.88	38.44	59.76	46.84	105.56	67.12	45.43
Standard Deviation	75.2	1.37	4.60	0.62	0.70	0.41	1.69	1.22	1.50
09/14/21	4443	88.68	184.88	36.66	61.04	47.62	108.87	66.85	46.56
09/15/21	4481	88.17	183.65	37.79	60.31	47.39	108.16	66.42	44.04
09/16/21	4474	87.08	181.70	37.74	59.27	46.82	107.11	64.91	44.77
09/17/21	4433	86.67	178.04	37.97	58.57	46.44	105.74	65.61	44.28
09/20/21	4358	88.12	179.25	37.61	59.22	47.35	106.01	65.67	43.98
09/21/21	4354	87.48	178.46	38.24	59.18	47.10	106.70	65.74	43.00
09/22/21	4396	87.52	177.72	38.33	59.32	47.08	106.37	65.90	43.98
09/23/21	4449	87.20	177.83	38.67	59.61	47.10	105.16	65.87	44.52
09/24/21	4455	87.77	176.79	38.68	59.78	47.17	104.67	65.91	44.26
09/27/21	4443	86.71	170.71	39.02	58.99	46.48	104.47	65.82	44.33
09/28/21	4353	86.19	168.19	38.31	58.64	46.30	103.59	65.64	44.07
09/29/21	4359	86.90	170.30	38.68	59.50	46.83	103.68	67.08	44.33
09/30/21	4308	85.52	169.04	38.17	58.93	46.08	102.78	66.06	43.68
10/01/21	4357	85.58	168.34	38.19	58.78	46.25	102.00	66.03	43.90
10/04/21	4300	87.51	170.91	38.14	59.81	46.92	104.36	67.86	44.56
10/05/21	4346	87.90	171.60	38.05	59.96	46.83	104.70	67.54	44.57
10/06/21	4364	88.87	174.18	38.51	60.41	46.96	106.35	68.51	45.22
10/07/21	4400	88.94	172.47	38.54	60.68	46.95	105.65	68.55	45.64
10/08/21	4391	88.30	170.83	38.28	60.28	46.36	104.48	67.82	45.87
10/11/21	4361	88.54	168.86	38.31	60.39	46.26	103.73	68.09	46.74
10/12/21	4351	89.14	169.54	38.31	60.57	46.24	104.67	67.86	45.96
10/13/21	4364	89.29	169.40	38.12	60.27	46.42	104.79	67.45	46.07
10/14/21	4438	90.57	171.18	39.01	60.62	47.13	106.08	68.08	46.57
10/15/21	4471	89.82	171.42	39.27	61.01	47.48	105.42	67.92	46.14
10/18/21	4486	89.00	170.39	38.41	59.84	46.72	106.07	67.62	46.60
10/19/21	4520	89.25	172.65	38.78	59.62	47.07	105.42	67.83	47.04
10/20/21	4536	90.12	173.97	38.85	60.06	47.30	105.76	68.61	47.68
10/21/21	4550	89.47	173.55	39.55	59.09	46.61	106.89	68.41	47.74
10/22/21	4545	89.43	175.81	39.35	59.18	46.92	108.24	68.72	48.02
10/25/21	4566	90.57	174.85	39.79	59.96	47.02	109.00	69.34	48.83

All prices are adjusted closing prices reported by Yahoo! Finance, http://finance.yahoo.com

DCF Dividend Yields

Company	Ticker	[1] Dividend	[2] Stock Price	[3] Dividend Yield
American States Water Co	AWR	0.365	88.21	0.41%
American Water Works Co Inc	AWK	0.603	173.88	0.35%
Artesian Resources Corp.	ARTNA	0.261	38.44	0.68%
California Water Service Gp	CWT	0.230	59.76	0.38%
Essential Utilities, Inc.	WTRG	0.268	46.84	0.57%
Middlesex Water Co	MSEX	0.273	105.56	0.26%
SJW Corp	SJW	0.340	67.12	0.51%
York Water Co	YORW	0.187	45.43	0.41%
Average		**$0.32**	**$78.16**	**0.45%**

[1] 2021 Q3 reported quarterly dividends per share. Nasdaq.com
[2] Average stock price from Exhibit DJG-3
[3] = [1] / [2] (quarterly dividend yield)

DCF Terminal Growth Rate Determinants

Terminal Growth Determinants	Rate	
Nominal GDP	3.8%	[1]
Real GDP	1.8%	[2]
Inflation	2.0%	[3]
Projected Growth Rate	6.3%	[4]
Risk Free Rate	2.0%	[5]
Highest	**6.3%**	

[1],[2] [3] CBO, The 2021 Long-Term Budget Outlook, p. 34

[4] I/B/E/S growth rate from Exhibit PRM-1, Sch. 9

[5] From Exhibit DJG-7

DCF Final Results

[1]	[2]	[3]	[4]
Dividend (d_0)	Stock Price (P_0)	Growth Rate (g)	**DCF Result**
$0.32	$78.16	6.31%	**8.0%**

[1] Average proxy dividend from Exhibit DJG-4

[2] Average proxy stock price from Exhibit DJG-3

[3] Highest growth determinant from Exhibit DJG-5

[4] Quarterly DCF Approximation = $[d_0(1 + g)^{0.25}/P_0 + (1 + g)^{0.25}]^4 - 1$

CAPM Risk-Free Rate

Date	Rate
09/14/21	1.85%
09/15/21	1.87%
09/16/21	1.88%
09/17/21	1.91%
09/20/21	1.85%
09/21/21	1.86%
09/22/21	1.84%
09/23/21	1.92%
09/24/21	1.99%
09/27/21	1.99%
09/28/21	2.07%
09/29/21	2.09%
09/30/21	2.08%
10/01/21	2.04%
10/04/21	2.05%
10/05/21	2.10%
10/06/21	2.08%
10/07/21	2.13%
10/08/21	2.16%
10/12/21	2.10%
10/13/21	2.05%
10/14/21	2.02%
10/15/21	2.05%
10/18/21	2.01%
10/19/21	2.09%
10/20/21	2.12%
10/21/21	2.13%
10/22/21	2.08%
10/25/21	2.09%
10/26/21	2.05%
Average	**2.02%**

*Daily Treasury Yield Curve Rates on 30-year T-bonds, http://www.treasury.gov/resources-center/data-chart-center/interest-rates/

CAPM Beta Coefficient

Company	Ticker	Beta
American States Water Co	AWR	0.65
American Water Works Co Inc	AWK	0.90
Artesian Resources Corp.	ARTNA	0.75
California Water Service Gp	CWT	0.70
Essential Utilities, Inc.	WTRG	1.00
Middlesex Water Co	MSEX	0.70
SJW Corp	SJW	0.80
York Water Co	YORW	0.85
Average		0.79

Betas from Value Line Investment Survey

CAPM Implied Equity Risk Premium Estimate

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Year	Market Value	Operating Earnings	Dividends	Buybacks	Earnings Yield	Dividend Yield	Buyback Yield	Gross Cash Yield
2015	17,900	885	382	572	4.95%	2.14%	3.20%	5.33%
2016	19,268	920	397	536	4.77%	2.06%	2.78%	4.85%
2017	22,821	1,066	420	519	4.67%	1.84%	2.28%	4.12%
2018	21,027	1,282	456	806	6.10%	2.17%	3.84%	6.01%
2019	26,760	1,305	485	729	4.88%	1.81%	2.72%	4.54%
2020	31,659	1,019	480	520	3.22%	1.52%	1.64%	3.16%

Cash Yield	4.67%	[9]
Growth Rate	2.85%	[10]
Risk-free Rate	2.02%	[11]
Current Index Value	4,422	[12]

	[13]	[14]	[15]	[16]	[17]
Year	1	2	3	4	5
Expected Dividends	212	218	224	231	237
Expected Terminal Value					4904
Present Value	198	191	183	176	3673
Intrinsic Index Value	4422	[18]			
Required Return on Market	7.0%	[19]			
Implied Equity Risk Premium	**4.9%**	[20]			

[1-4] S&P Quarterly Press Releases, data found at https://us.spindices.com/indices/equity/sp-500, Q4 2018
[1] Market value of S&P 500
[5] = [2] / [1]
[6] = [3] / [1]
[7] = [4] / [1]
[8] = [6] + [7]
[9] = Average of [8]
[10] = Compound annual growth rate of [2] = (end value / beginning value)$^{1/4}$-1
[11] Risk-free rate from DJG-1-7
[12] 30-day average of closing index prices from DJG-1-3 (^GSPC column)
[13-16] Expected dividends = [9]*[12]*(1+[10])^{n} ; Present value = expected dividend / (1+[11]+[19])^{n}
[17] Expected terminal value = expected dividend * (1+[11]) / [19] ; Present value = (expected dividend + expected terminal value) / (1+[11]+[19])^{n}
[18] = Sum([13-17]) present values.
[19] = [20] + [11]
[20] Internal rate of return calculation setting [18] equal to [12] and solving for the discount rate

CAPM Equity Risk Premium Results

IESE Business School Survey	5.5%	[1]
Duff & Phelps Report	5.5%	[2]
Damodaran (average)	5.2%	[3]
Garrett	4.9%	[4]
Average	**5.3%**	
Highest	**5.5%**	

CAPM Final Result

[1]	[2]	[3]	[4]
Risk-Free Rate	Proxy Beta	Risk Premium	**CAPM Result**
2.02%	0.794	5.5%	**6.4%**

[1] From DJG-7, risk-free rate exhibit
[2] From DJG-8, beta exhibit (avg. beta of proxy group)
[3] From DJG-10, equity risk premium exhibit
[4] = [1] + [2] * [3]

Cost of Equity Summary

Model	Cost of Equity
Discounted Cash Flow Model	8.0%
Capital Asset Pricing Model	6.4%
Average	**7.2%**

Market Cost of Equity vs. Awarded Returns

Attachment DJG-13

	[1]		[2]		[3]		[4]	[5]	[6]	[7]
	Electric Utilities		Gas Utilities		Total Utilities		S&P 500	T-Bond	Risk	Market
Year	ROE	#	ROE	#	ROE	#	Returns	Rate	Premium	COE
1990	12.70%	38	12.68%	33	12.69%	71	-3.06%	8.07%	3.89%	11.96%
1991	12.54%	42	12.45%	31	12.50%	73	30.23%	6.70%	3.48%	10.18%
1992	12.09%	45	12.02%	28	12.06%	73	7.49%	6.68%	3.55%	10.23%
1993	11.46%	28	11.37%	40	11.41%	68	9.97%	5.79%	3.17%	8.96%
1994	11.21%	28	11.24%	24	11.22%	52	1.33%	7.82%	3.55%	11.37%
1995	11.58%	28	11.44%	13	11.54%	41	37.20%	5.57%	3.29%	8.86%
1996	11.40%	18	11.12%	17	11.26%	35	22.68%	6.41%	3.20%	9.61%
1997	11.33%	10	11.30%	12	11.31%	22	33.10%	5.74%	2.73%	8.47%
1998	11.77%	10	11.51%	10	11.64%	20	28.34%	4.65%	2.26%	6.91%
1999	10.72%	6	10.74%	6	10.73%	12	20.89%	6.44%	2.05%	8.49%
2000	11.58%	9	11.34%	13	11.44%	22	-9.03%	5.11%	2.87%	7.98%
2001	11.07%	15	10.96%	5	11.04%	20	-11.85%	5.05%	3.62%	8.67%
2002	11.21%	14	11.17%	19	11.19%	33	-21.97%	3.81%	4.10%	7.91%
2003	10.96%	20	10.99%	25	10.98%	45	28.36%	4.25%	3.69%	7.94%
2004	10.81%	21	10.63%	22	10.72%	43	10.74%	4.22%	3.65%	7.87%
2005	10.51%	24	10.41%	26	10.46%	50	4.83%	4.39%	4.08%	8.47%
2006	10.32%	26	10.40%	15	10.35%	41	15.61%	4.70%	4.16%	8.86%
2007	10.30%	38	10.22%	35	10.26%	73	5.48%	4.02%	4.37%	8.39%
2008	10.41%	37	10.39%	32	10.40%	69	-36.55%	2.21%	6.43%	8.64%
2009	10.52%	40	10.22%	30	10.39%	70	25.94%	3.84%	4.36%	8.20%
2010	10.37%	61	10.15%	39	10.28%	100	14.82%	3.29%	5.20%	8.49%
2011	10.29%	42	9.92%	16	10.19%	58	2.10%	1.88%	6.01%	7.89%
2012	10.17%	58	9.94%	35	10.08%	93	15.89%	1.76%	5.78%	7.54%
2013	10.03%	49	9.68%	21	9.93%	70	32.15%	3.04%	4.96%	8.00%
2014	9.91%	38	9.78%	26	9.86%	64	13.52%	2.17%	5.78%	7.95%
2015	9.85%	30	9.60%	16	9.76%	46	1.38%	2.27%	6.12%	8.39%
2016	9.77%	42	9.54%	26	9.68%	68	11.77%	2.45%	5.69%	8.14%
2017	9.74%	53	9.72%	24	9.73%	77	21.61%	2.41%	5.08%	7.49%
2018	9.64%	37	9.62%	26	9.63%	63	-4.23%	2.68%	5.96%	8.64%
2019	9.64%	67	9.71%	32	9.66%	99	31.22%	1.92%	5.20%	7.12%
2020	9.43%	43	9.46%	34	9.44%	77	18.01%	0.93%	4.72%	5.65%

[1], [2], [3] Average annual authorized ROE for electric and gas utilities, RRA Regulatory Focus: Major Rate Case Decisions

[3] = [1] + [2]

[4], [5], [6] Annual S&P 500 return, 10-year T-bond Rate, and equity risk premium published by NYU Stern School of Business

[7] = [5] + [6] ; Market cost of equity represents the required return for investing in all stocks in the market for a given year

Proxy Company Debt Ratios

Company	Ticker	Debt Ratio
American States Water Co	AWR	47%
American Water Works Co Inc	AWK	59%
Artesian Resources Corp.	ARTNA	46%
California Water Service Gp	CWT	46%
Essential Utilities, Inc.	WTRG	54%
Middlesex Water Co	MSEX	44%
SJW Corp	SJW	58%
York Water Co	YORW	46%
Average		50%

Debt ratios from Value Line Investment Survey

Competitive Industry Debt Ratios

Exhibit DJG-15

Industry	# Firms	Debt Ratio
Financial Svcs. (Non-bank & Insurance)	235	95%
Retail (Building Supply)	15	88%
Hospitals/Healthcare Facilities	32	84%
Air Transport	17	84%
Advertising	61	81%
Hotel/Gaming	66	77%
Brokerage & Investment Banking	39	77%
Auto & Truck	19	75%
Retail (Automotive)	30	74%
Food Wholesalers	18	74%
Retail (Special Lines)	85	72%
Recreation	69	71%
Bank (Money Center)	7	68%
Retail (Grocery and Food)	14	68%
Transportation	21	68%
Computers/Peripherals	52	68%
Packaging & Container	26	67%
Broadcasting	29	65%
Rubber& Tires	3	64%
Beverage (Soft)	41	64%
Chemical (Basic)	48	62%
Oil/Gas Distribution	57	62%
Cable TV	13	61%
R.E.I.T.	238	61%
Apparel	51	61%
Trucking	35	61%
Computer Services	116	61%
Retail (Distributors)	85	60%
Telecom (Wireless)	16	60%
Power	55	60%
Farming/Agriculture	32	59%
Business & Consumer Services	169	59%
Aerospace/Defense	72	59%
Telecom. Services	58	59%
Retail (Online)	75	58%
Utility (General)	16	58%
Software (Internet)	36	57%
Household Products	140	57%
Construction Supplies	46	57%
Real Estate (Operations & Services)	61	56%
Building Materials	42	56%
Transportation (Railroads)	6	56%
Coal & Related Energy	29	56%
Chemical (Diversified)	5	56%
Office Equipment & Services	22	55%
Environmental & Waste Services	86	54%
Auto Parts	52	53%
Drugs (Biotechnology)	547	52%
Real Estate (Development)	25	52%
Publishing & Newspapers	29	52%
Green & Renewable Energy	25	52%
Retail (General)	17	52%
Shoe	11	50%
Total / Average	**3,194**	**64%**

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/dbtfund.htm

Weighted Average Rate of Return Proposal

Capital Component	Proposed Ratio	Cost Rate	Weighted Cost
Debt	50.0%	4.00%	2.00%
Fund Equity	50.0%	8.00%	4.00%
Total	100.0%		6.00%

Hamada Model

Unlevering Beta

Proposed Debt Ratio	46%	[1]
Proposed Equity Ratio	54%	[2]
Debt / Equity Ratio	85%	[3]
Tax Rate	21%	[4]
Equity Risk Premium	5.5%	[5]
Risk-free Rate	2.0%	[6]
Proxy Group Beta	0.79	[7]
Unlevered Beta	0.47	[8]

Relevered Betas and Cost of Equity Estimates

[9]	[10]	[11]	[12]
Debt Ratio	D/E Ratio	Levered Beta	Cost of Equity
0%	0%	0.474	4.63%
20%	25%	0.568	5.14%
30%	43%	0.635	5.51%
40%	67%	0.724	6.00%
50%	100%	0.849	6.69%
55%	122%	0.932	7.14%
60%	150%	1.036	7.72%

[1] Company proposed debt ratio

[2] Company proposed equity ratio

[3] = [1] / [2]

[4] Tax rate

[5] Equity risk premium from Exhibit DJG-11

[6] Risk-free rate from Exhibit DJG-11

[7] Average proxy beta from Exhibit DJG-11

[8] = [7] / (1 + (1 - [4]) * [3])

[9] Various debt ratios (Garrett proposed highlighted)

[10] = [9] / (1 - [9])

[11] = [8] * (1 + (1 - [4]) * [10])

[12] = [6] + [11] * [5]

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, David J. Garrett, 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: November 10, 2021 Signature: _____
*319618 David J. Garrett

Consultant Address: Resolve Utility Consulting, PLLC
101 Park Avenue
Suite 1125
Oklahoma City, OK 73102

OCA STATEMENT 4

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	**)**	
v.	**)**	**Docket No. R-2021-3027385**
Aqua Pennsylvania, Inc.	**)**	**Docket No. R-2021-3027386**
Aqua Pennsylvania Wastewater, Inc.	**)**	

DIRECT TESTIMONY AND EXHIBITS

OF

GLENN A. WATKINS

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

NOVEMBER 10, 2021

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Glenn A. Watkins. My business address is 6377 Mattawan Trail, Mechanicsville, Virginia 23116.

Q. WHAT IS YOUR PROFESSIONAL AND EDUCATIONAL BACKGROUND?

A. I am President and Senior Economist of Technical Associates, Inc., which is an economics and financial consulting firm with offices in the Richmond, Virginia area. Except for a six-month period during 1987 in which I was employed by Old Dominion Electric Cooperative, as its forecasting and rate economist, I have been employed by Technical Associates continuously since 1980.

During my career at Technical Associates, I have conducted marginal and embedded cost of service, rate design, cost of capital, revenue requirement, and load forecasting studies involving numerous electric, gas, water/wastewater, and telephone utilities, and have provided expert testimony in Alabama, Arizona, Delaware, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Jersey, North Carolina, Ohio, Pennsylvania, Vermont, Virginia, South Carolina, Washington, and West Virginia. A more complete description of my education and experience is provided in my Schedule GAW-1.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. Technical Associates, Inc. has been retained by the Pennsylvania Office of Consumer Advocate ("OCA") to evaluate the reasonableness of Aqua Pennsylvania, Inc.'s ("Aqua" or "Company") water and wastewater proposed Act 11 revenue requirement shifting between wastewater and water operations, class revenue allocations, Residential rate design and negotiated contract rates. The purpose of my direct testimony is to provide comments regarding the Company's proposals and to present my findings and recommendations based on the studies I have undertaken in this case.

Q. HAVE YOU TESTIFIED BEFORE THIS COMMISSION ON THESE ISSUES IN THE PAST?

A. Yes. I have provided testimony before this Commission on numerous occasions concerning utility valuations, cost allocations, rate design, cost of capital, revenue requirements, and negotiated rate contracts involving water, wastewater, electric, and natural gas distribution utilities.

II. SUMMARY OF FINDINGS & RECOMMENDATIONS

Q. PLEASE PROVIDE A SUMMARY OF YOUR FINDINGS AND RECOMMENDATIONS.

A. As part of my investigation I reviewed the Company's water and wastewater cost of service studies ("CCOSS") and have made no changes. My revenue allocations are at Aqua's proposed revenue requirement rather than OCA's recommended revenue requirement in order to permit an apples-to-apples comparison to Aqua's proposals.

While Aqua proposes to subsidize its wastewater revenue requirement by $20.8 million with increased water revenues by the same amount under Act 11, I recommend that the Act 11 subsidy should be reduced by $9.1 million. With a higher wastewater revenue requirement, I have allocated the additional $9.1 million of required wastewater revenues to individual divisions and rate classes. Similarly, I reduced the water revenue requirement by the same amount and also allocated this reduction across individual divisions and rate classes.

With regard to Residential rate design, I recommend several changes to Aqua's proposal, including holding the current water Main division customer charges at their current rates as well as leaving the current wastewater Rate Zone 1 customer charges at their current rates.

With regard to the Company's study to cap wastewater rates, I recommend continued study for alternatives to cap wastewater rates resulting from irrigation use.

I have adjusted the Company's proforma fully projected future test year water revenues at current rates relating to negotiated rate contracts.

Finally, I recommend the Commission reject the Company's proposal for a new Purchased Water Adjustment ("PWA") Clause and a proposal for a new Energy Cost Adjustment Mechanism ("ECAM").

III. ACT 11 SUBSIDIZATION BETWEEN WATER & WASTEWATER

Q. DOES AQUA PROPOSE ANY SUBSIDIZATION BETWEEN ITS WATER AND WASTEWATER OPERATIONS IN THIS CASE?

A. Yes. Under Act 11 of 2012, a wastewater utility that is also a water utility may propose that its water operations subsidize its wastewater operations. The particular provision of Act 11 on which Aqua relies is an amendment to Section 1311 of the Public Utility Code, 66 Pa. C.S. § 1311. The Act amended subsection (c) and added a new subsection (e) of that section. The relevant portions of Section 1311 now read as follows:

> 1311 Valuation of and return on the property of a public utility.
>
> * * *
>
> (c) Segregation of property. When any public utility furnishes more than one of the different types of utility service, the commission shall segregate the property used and useful in furnishing each type of such service, and shall not consider the property of such public utility as a unit in determining the value of the rate base of such public utility for the purpose of fixing base rates. A utility that provides water and wastewater service shall be exempt from this subsection upon petition of a utility to combine water and wastewater revenue requirements. The commission, when setting base rates, after notice and an opportunity to be heard, may allocate a portion of the wastewater revenue requirement to the combined water and wastewater customer base if in the public interest.
>
> * * *
>
> (e) Definition. As used in this section, the term "utility that provides both water and wastewater service" shall include separate companies that individually provide water and wastewater service so long as the companies are wholly owned by a common parent company.[1]

[1] 66 Pa. C.S. § 1311 (effective April 16, 2012).

In this case, Aqua is proposing that its water operations subsidize its wastewater operations by $20.8 million such that under the Company's proposals, wastewater revenues would be subsidized by 30% as shown in the table below:

TABLE 1
Aqua Proposed Cross-Subsidization Between Water and Wastewater[2]

	(1) Present Revenues	(2) Aqua Proposed Revenues	(3) Full Cost of Service	(4) COS Required Increase (3) - (1)	(5) Act 11 Subsidy (Excess) (3) - (2)	(6) Percent Subsidy (Excess) (5) / (3)
Wastewater:						
Legacy Systems	$19,012	$22,485	$35,938	$16,926	$13,453	37.4%
Acquired Systems:						
Limerick	$3,979	$6,947	$9,926	$5,947	$2,978	30.0%
East Bradford	$1,015	$1,373	$1,831	$817	$458	25.0%
Cheltenham	$7,259	$9,800	$10,316	$3,057	$516	5.0%
East Norriton	$2,924	$4,082	$5,831	$2,907	$1,749	30.0%
New Garden	$2,872	$3,935	$5,623	$2,751	$1,687	30.0%
Total Wastewater	**$37,059**	**$48,623**	**$69,465**	**$32,406**	**$20,842**	**30.0%**
Total Water	**$509,679**	**$595,863**	**$575,026**	**$65,347**	**-$20,839**	**-3.6%**

Q. IS IT APPROPRIATE FOR A WATER UTILITY'S OPERATIONS TO SUBSIDIZE ITS WASTEWATER OPERATIONS?

A. From a theoretical standpoint, no. That is, from both an efficiency and fairness perspective, each operation should price its products and services on a stand-alone basis such that each operation recovers its cost of providing service.

However, if all water customers are also wastewater customers (and vice versa), any cross-subsidization may not be material from a customer's combined water and wastewater bill.

Q. ARE ALL OF AQUA'S WATER CUSTOMERS ALSO WASTEWATER CUSTOMERS AND VICE VERSA?

A. No. As shown in Table 2 below, Aqua has almost eight times as many water customers as wastewater customers. Furthermore, there are several Aqua wastewater systems whose customers do not purchase their water from Aqua.

[2] Sources: Aqua Exhibit 5-A, Part I and 5-B, Part I (witness Constance Heppenstall's cost of service studies).

TABLE 2
Aqua PA Number of Customers
Water vs. Wastewater [3]

	Number of Customers
Non-Fire Water [4]	**415,057**
Wastewater:	
Legacy System	17,582
Acquired Systems:	
Limerick	7,453
East Bradford	14,903
Cheltenham	6,853
East Norriton	4,961
New Garden	2,115
Total Wastewater	**53,867**

Although Act 11 allows a discretionary cross-subsidization between Aqua's water and wastewater operations, upon approval of the Commission, we can see that under Aqua's proposals, all of its water customers would significantly subsidize the Company's wastewater operations. At the same time, most of the Company's water customers do not obtain wastewater service from Aqua such that they receive no benefits from Aqua's wastewater operations. Indeed, the majority of Aqua's water customers must also then pay for wastewater service from another provider.[5]

Q. WOULD IT BE POSSIBLE TO STRUCTURE AQUA'S WATER AND WASTEWATER RATES SUCH THAT ANY CROSS-SUBSIDIZATION IS BORNE ONLY BY THOSE CUSTOMERS THAT RECEIVE BOTH SERVICES FROM AQUA?

A. Technically, this could be done. However, such an endeavor would likely be impractical and contrary to the Commission's policy of gradually moving to a unified

[3] *Id.*
[4] Excludes Private and Public Fire Protection.
[5] There are some Aqua water customers who have septic systems and do not directly pay wastewater charges but must incur the capital and operating costs required for a septic system.

statewide rate for Aqua. Furthermore, given the significant deficiency associated with Aqua's wastewater operations (from a cost of service perspective), such a rate design would likely require very expensive water bills for these joint-use customers.

A. <u>Wastewater Revenue Allocations</u>

Q. DO YOU RECOMMEND AN ALTERNATIVE ACT 11 CROSS-SUBSIDIZATION BETWEEN AQUA'S WATER AND WASTEWATER OPERATIONS?

A. Yes. When Aqua acquired the five wastewater systems relevant to this proceeding, the Company's wastewater customer base increased from 17,582 to 53,867. In other words, the five acquired municipal systems more than tripled the Company's wastewater customer base wherein these five acquired systems represent 36,385 customers.

Each of these five former municipal systems were subject to Section 1329 proceedings in which the purchase price above net book value (i.e. acquisition premium) is allowed in rate base.[6] Indeed, the acquisition premiums were substantial for four of the five acquired systems. The approved rate base for each of these five acquired systems along with the original cost rate base is summarized in below:

TABLE 3
Aqua Wastewater
Acquisition Premiums in Rate Base
($000)

System	Net Book Value	Final Rate Base	Approved Amount Over Net Book Value	Acquisition Premium Percentage
Limerick	$46,153.9	$64,373.4	$18,219.5	39.5%
East Bradford	$5,473.9	$5,000.0	($473.9)	-8.7%
Cheltenham	$15,408.5	$50,250.0	$34,841.5	226.1%
East Norriton	$8,407.0	$20,750.0	$12,343.0	146.8%
New Garden	$18,567.7	$29,500.0	$10,932.3	58.9%
Total	$94,011.0	$169,873.4	$75,862.4	80.7%

[6] Book value under Section 1329 does not exclude contributed plant or capital. 66 Pa. C.S. § 1329(d)(5).

As a result of these municipal systems being sold significantly above net book value, these municipalities received the proceeds from the sale of their municipal systems. The additional funds that went to each of the municipalities then provided benefits to its citizens who are now Aqua wastewater customers. To illustrate, in response to the current Aqua rate case, Limerick Township provided a Notice to Residents in August 2021[7] explaining several benefits from the sale of its system to its citizens such as:

- "Limerick sewer rates have not increased since 2014. If the Township had not sold the sewer system in 2018, projections show that rate increases would have been required by the Township for system repairs, higher system operating costs, and sewer capital upgrades";

- "Along with the above sewer rate increases, Township Real Estate Tax increases would have been necessary to fund Long-Term Capital Projects related to police, fire, and emergency response services, the expansion of township park, trails, and open space system, as well as, upgrades to Limerick's roadway infrastructure";

- "As a result of the sale of the sewer system to Aqua, Limerick Township has been able to maintain real estate taxes at their current level since 2016, and fund the Township's Capital Projects, while expanding all levels of services to the community."

Because the citizens of these acquired systems received the benefits of selling their respective municipal wastewater systems above book value and Section 1329 requires that acquisition premiums be included in rate base, I recommend that in addition to the wastewater increases proposed by Aqua, the revenue requirement associated with the acquisition premiums should also be borne by wastewater customers to the largest extent practical.

Q. HOW DID YOU DEVELOP THE REVENUE REQUIREMENTS ASSOCIATED WITH THE VARIOUS ACQUISITION PREMIUMS?

A. My Schedule GAW-2 provides the calculation of each of the five acquired wastewater systems' revenue requirement associated with their respective acquisition

[7] https://www.limerickpa.org/DocumentCenter/View/4291/Aqua---Key-Points---Notice-of-Proposed-Wastewater-Rate-Changes

premium. These revenue requirements include the depreciation associated with the acquisition premium along with the return and taxes associated with the acquisition premium plant amounts.[8] The following table provides a summary of the revenue requirements associated with the acquisition premiums:[9]

TABLE 4
Revenue Requirement
Associated w/Wastewater
Acquisition Premiums

Limerick	$2,528,844
East Bradford	-$64,160
Cheltenham	$4,348,913
East Norriton	$1,750,565
New Garden	$1,491,817
Total	$10,055,979

Q. PLEASE EXPLAIN HOW YOU PROCEEDED WITH YOUR RECOMMENDED ACT 11 ADJUSTMENT.

A. As a first step, I allocated the $10.056 million total acquisition premium revenue requirement to each of the five acquired wastewater systems based on current rate revenues. I then placed a constraint that my recommended increase to each of these systems did not result in proposed revenues exceeding each system's cost of service (revenue requirement). Next, in the December 3, 2020 Order on Remand relating to the Acquisition of New Garden (Docket No. A-2016-2580061), the OCA agreed not to oppose an increase to New Garden in this rate case more than two times the system average increase of the entire Aqua wastewater division. Therefore, I have limited the New Garden increase to two times the system average increase.

The above increases result in an additional $5,591,600 assigned to the acquired systems. Remembering that the target additional increase is $10,055,979, I then doubled Aqua's proposed increases to each of the legacy systems. This then produced an additional $3,473,445 assigned to the legacy systems. On a total

[8] The return component is based on the Company's proposed capital structure and return on equity.
[9] The revenue requirements reflect only the amount of the acquisition premium and not the full fair market value revenue requirement.

wastewater basis, I have assigned $9,065,045 more Act 11 increase to wastewater than that proposed by Aqua ($5,591,600 + $3,473,445).

Q. WHY IS IT APPROPRIATE TO ASSIGN AN ADDITIONAL $3,454,398 REVENUE INCREASE TO THE LEGACY WASTEWATER SYSTEMS RELATED TO THE ACQUISITION PREMIUM REVENUE REQUIREMENT?

A. The rationale for moving all wastewater systems to a statewide rate is that while there may be large rate increases to a particular system at any point in time, these systems will receive benefits from being part of a larger statewide wastewater network. In addition, as shown in Table 1, the cost of service required increase to the legacy systems is $16.926 million. My recommended increase to the legacy systems is $6.947 million ($3.473 million times 2) which is still significantly less than the full cost of service required increase.

Q. PLEASE PROVIDE A COMPARISON OF AQUA'S PROPOSED AND YOUR RECOMMENDED WASTEWATER INCREASES.

A. The details of my recommended wastewater increases are provided in my Schedule GAW-3 and are summarized in the following table:

TABLE 5
Aqua Wastewater – Aqua & OCA Proposed Increases
($000)

Current Rate Zone	Division	Aqua Proposed Increase	OCA Increase	Aqua Pct. Increase	OCA Pct. Increase
RZ1	Media	$477,615	$955,230	20.2%	40.4%
RZ1-EDU	Bridlewood, Eagle Rock	$192,876	$385,751	20.3%	40.6%
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$717,746	$1,435,493	33.3%	66.6%
RZ1B	Penn Township	$78,677	$157,354	7.7%	15.3%
RZ2	Emlenton, River Crest, White Haven	$143,391	$286,781	7.9%	15.7%
RZ2	Pinecrest	-$3,282	-$6,565	-4.8%	-9.5%
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$668,300	$1,336,600	20.7%	41.5%
RZ3	Woodloch Springs [10]	$20,920	$41,840	6.5%	13.0%
RZ4	Honeycroft, Lake Harmony, New Daleville	$761,910	$1,523,820	19.1%	38.2%
RZ5	Avon Grove, East Bradford, Little Washington	$165,759	$331,518	18.0%	35.9%
RZ5	Newlin Green	$4,906	$9,813	4.9%	9.7%
RZ6	Masthope	$155,015	$310,030	20.6%	41.1%
Bulk	Southdown Home	$0	$0	0.0%	0.0%
Bulk	East Brandywine	$0	$0	0.0%	0.0%
Bulk	Foster Township	-$92	-$185	0.0%	-0.1%
Bulk	Dennison	-$20	-$40	0.0%	-0.1%
Bulk	Upper Providence	$75,990	$151,979	14.0%	28.0%
Bulk	Elwyn	$13,794	$27,588	14.0%	28.0%
Bulk	Penn Lake	-$46	-$93	0.0%	-0.1%
Bulk	East Side	-$13	-$25	0.0%	0.0%
Total Legacy System		$3,473,445	$6,946,890	18.3%	36.6%
Acquired	Limerick	$2,968,877	$5,187,343	74.79%	130.67%
Acquired	East Bradford	$358,379	$833,254	35.90%	83.48%
Acquired	Cheltenham	$2,541,306	$3,077,711	35.11%	42.52%
Acquired	East Norriton	$1,157,851	$2,787,619	39.70%	95.59%
Acquired	New Garden	$1,063,739	$1,795,825	37.04%	62.54%
Total Newly Acquired Systems		$8,090,152	$13,681,752	44.96%	76.03%
Total Aqua Wastewater		$11,563,597	$20,628,642	31.27%	55.78%

To be clear, my proposed increases are at Aqua's full revenue requirement request. If the Commission authorizes a lower revenue requirement, as supported by the OCA's witnesses, these percentage increases will be reduced. I address my recommendations for how rates should be scaled-back below.

Q. HOW DID YOU ASSIGN YOUR RECOMMENDED ADDITIONAL $9.065 MILLION WASTEWATER INCREASE TO INDIVIDUAL CLASSES?

A. I increased Aqua's proposed class increases for each division pro-ratably. My Schedule GAW-4 provides my recommended class increases for each wastewater division. Page 1 of Schedule GAW-4 provides a summary comparison of Aqua's and

[10] Excludes $19,046 increase to contract revenues.

my class increases for each division while pages 2 through 8 of Schedule GAW-4 provides a detailed comparison for each class by division.

B. <u>Water Revenue Allocations</u>

Q. DOES YOUR RECOMMENDED $9.065 MILLION ADDITIONAL INCREASE TO AQUA'S WASTEWATER OPERATIONS THEN DECREASE THE AMOUNT OF SUBSIDIZATION BY WATER CUSTOMERS?

A. Yes. My recommended $9.065 million additional increase to Aqua's wastewater operations reduces Aqua's proposed water revenues by the same amount. To be clear, Aqua proposes that its water operations subsidize its wastewater operations by $20.839 million. My recommended Act 11 water subsidization is $11.774 million ($20.839 million minus $9.065 million).

Q. PLEASE EXPLAIN HOW YOU ALLOCATED WATER REVENUES TO THE VARIOUS DIVISIONS AND CLASSES.

A. My analysis is based on the Company's requested total water increase of $86,184,739.[11] I then decreased this amount by the wastewater revenue subsidy of $9,065,045. I accepted the Company's proposed increases by division and class and allocated the $9,065,045 transfer to each division and class pro-ratably.[12] The development of my water revenue allocation by division is shown on page 1 of my Schedule GAW-5. Page 2 of this Schedule provides a summary of my recommended increases by class and by division while the details are provided on pages 3 through 11.

C. <u>Scale-Back of Revenue Increases</u>

Q. TO THE EXTENT THE COMMISSION AUTHORIZES A LOWER WASTEWATER REVENUE REQUIREMENT THAN THAT REQUESTED BY AQUA, HOW SHOULD YOUR RECOMMENDED WASTEWATER REVENUE ALLOCATION BE SCALED-BACK?

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[11] Witness Heppenstall's revised Schedule 1 per response to I&E-RS-9-D-W.

[12] The $9,065,045 reduction to the Company's requested increase excludes any reduction to the Company's proposal for Public Fire and Contract rates.

A. As noted earlier and as shown in my Schedule GAW-2, the revenue requirement associated with the acquisition premiums for the five acquired systems is based on the Company's proposed capital structure and 10.75% return on equity. To the extent the Commission authorizes a different capital structure and/or authorizes a lower return on equity, the acquisition revenue requirements should be reduced consistent with my Schedule GAW-2 and reapportioned to the five acquired wastewater systems.

To the extent the Commission authorizes a lower wastewater revenue requirement than that requested by the Company for reasons other than cost of capital, my wastewater revenue allocation across divisions and classes should be scaled-back proportionally. This will then impact the Act 11 subsidy to water.

Q. TO THE EXTENT THE COMMISSION AUTHORIZES A LOWER WATER REVENUE REQUIREMENT THAN THAT REQUESTED BY AQUA, HOW SHOULD YOUR RECOMMENDED WATER REVENUE ALLOCATION BE SCALED-BACK?

A. My recommended water revenue allocation should be scaled-back proportionally across divisions and classes.

Q. TO THE EXTENT THE COMMISSION REQUIRES AN OVERALL REVENUE REDUCTION FOR AQUA'S WATER OPERATIONS, HOW SHOULD THIS OVERALL REDUCTION BE ALLOCATED ACROSS DIVISIONS AND CLASSES?

A. To the extent the Commission requires an overall revenue reduction to the Company's water operations, this reduction should be allocated to divisions and classes inversely proportional to my revenue increase allocation. In other words, those divisions and classes that would receive a larger increase under an overall increase scenario will then receive a smaller decrease under an overall revenue decrease. Similarly, those divisions and classes that would receive a smaller increase under an overall increase scenario will then receive a larger decrease under an overall

revenue decrease. Again, these decreases are inversely proportional to my revenue increase recommendation.

IV. RESIDENTIAL RATE DESIGN

A. Water Operations

Q. HOW DOES AQUA PROPOSE TO REDESIGN ITS RESIDENTIAL WATER RATES FOR THIS CASE?

A. Generally speaking, Ms. Heppenstall proposes the continued movement of those areas with year-round usage toward the Main division rates, continue its inverted-block usage rate structure and increase fixed monthly customer charges. The following table provides a summary of the Company's current and proposed 5/8" meter Residential customer charges:

TABLE 6
Aqua Water
Current & Proposed Residential 5/8" Customer Charges

Rate Zone	Division	Current	Proposed	Percent Change
1	Main	$18.00	$22.40	24.44%
2	Main	$18.00	$22.40	24.44%
3	Main	$28.00	$32.40	15.71%
BH	Bunker Hill	$8.00	$11.80	47.50%
PH	Phoenixville	$3.33	$4.90	47.15%

Q. DOES MS. HEPPENSTALL PROVIDE ANY SUPPORT FOR HER PROPOSED INCREASES TO RESIDENTIAL WATER CUSTOMER CHARGES?

A. Not directly. That is, on page 12 of her direct testimony, she only states that she increased the Main division 5/8" customer charge by 24.4% with no explanation as to how she arrived at this recommendation. Furthermore, her water cost of service study provided in Exhibit 5-A, Part I does not provide any indication of "customer" costs or support for any change in Residential customer charges. However, in

examining her water cost of service study Excel spreadsheet, there is a tab that indicates a "direct customer cost" for a 5/8" equivalent of $22.41 per month and a direct plus indirect customer cost of $28.36 per month.

Q. HAVE YOU EXAMINED THE REASONABLENESS OF MS. HEPPENSTALL'S CUSTOMER COST CALCULATIONS EMBEDDED IN HER EXCEL WORKSHEET?

A. Yes. Ms. Heppenstall functionalized every operating income and rate base account into various costing buckets including: "Base", "Extra Capacity", "Customer Facilities", "Customer Accounting", and "Fire Service". Ms. Heppenstall's calculated customer costs are the sum of her "Customer Facilities" and "Customer Accounting" costing buckets.

Q. HAVE YOU BEEN ABLE TO DETERMINE THE SPECIFIC OPERATING INCOME AND RATE BASE ACCOUNTS MS. HEPPENSTALL HAS INCLUDED IN HER "DIRECT CUSTOMER COSTS"?

A. Yes. My Schedule GAW-6 (consisting of two pages) presents a replication of Ms. Heppenstall's direct customer costs by individual account. This Schedule also shows the percentage of each account that Ms. Heppenstall has considered a direct customer cost.

Q. DOES MS. HEPPENSTALL'S "DIRECT CUSTOMER COSTS" REFLECT THOSE DIRECT COSTS TO CONNECT AND MAINTAIN A CUSTOMER'S ACCOUNT?

A. No. Ms. Heppenstall's so-called "direct customer costs" include a host of allocated overhead expenses that should not be considered customer costs. As shown in my Schedule GAW-6, the highlighted rows show the amount of allocated indirect costs that Ms. Heppenstall placed in her functionalized customer bucket that are not directly customer-related. Ms. Heppenstall has included $10,935,615 of indirect O&M expenses, $10,929,343 of indirect depreciation expenses and $29,437,120 of indirect rate base within her customer cost analysis.

Q. IS IT REASONABLE TO INCLUDE ALL OF THESE INDIRECT AND OVERHEAD COSTS IN EVALUATING THE REASONABLENESS OF AQUA'S WATER CUSTOMER CHARGES?

A. No. Customer costs should only include those costs required to connect and maintain a customer's account. In addition, 66 Pa. C.S. § 1328(b)(2) requires that the unrecovered public fire revenues be collected within fixed service charges or minimum bills.

Q. HAVE YOU CONDUCTED CUSTOMER COST ANALYSES THAT ARE MORE REASONABLE IN EVALUATING CUSTOMER CHARGES?

A. Yes. I have conducted customer cost analyses utilizing both a direct and indirect approach. My direct customer cost analysis includes only those costs required to connect and maintain a customer's account along with the required unrecovered public fire revenue requirement. My direct plus indirect customer cost analysis reflects the direct costs described above plus allocations of employee benefits, workers compensation insurance, and payroll taxes associated with direct labor costs.

Q. SHOULD CUSTOMER CHARGES REFLECT OVERHEAD OR OTHER INDIRECT COSTS?

A. No. Customer charges should only include those direct costs required to connect and maintain a customer's account.

Q. WHAT ARE THE RESULTS OF YOUR CUSTOMER COST ANALYSES?

A. The details of my customer cost analyses are presented in my Schedule GAW-7 while a summary is provided below:

TABLE 7
Aqua Water
Residential Customer Costs
(5/8" Meter Equivalent)[13]

	OCA Proposed Cost of Capital	Aqua Proposed Cost of Capital
Direct Costs	$17.07	$19.26
Direct + Indirect Costs	$17.36	$19.55

As shown above, I have determined that a reasonable Residential 5/8" meter customer charge is in the range of $17.07 to $17.36 which is based on OCA's recommended capital structure and an 8.0% return on equity. In this regard, no weight should be given to my analysis based on the Company's requested capital structure and 10.75% return on equity simply because there is virtually no risk associated with fixed monthly customer charges because this is guaranteed revenue recovery for the Company. As such OCA witness David Garrett's recommended 8.0% return on equity is on the high side for evaluating customer charges.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING RESIDENTIAL CUSTOMER CHARGES FOR THE MAIN DIVISION?

A. Even though my analyses indicate that reasonable customer costs in the range of $17.07 to $17.36 are slightly less than the current Main division 5/8" customer charge of $18.00, I recommend no change in the Residential customer charges for the Main division. I also recommend no increase to the Residential customer charge for Rate Zone 3 but do accept the Company's proposed increases to the customer charges for Bunker Hill and Phoenixville since the current rates are significantly lower than the Main division rates.

[13] Includes provision for unrecovered public fire revenue requirement.

B. Wastewater Operations

Q. HOW ARE AQUA'S WASTEWATER RESIDENTIAL RATES STRUCTURED?

A. As a result of recent and prior acquisitions of wastewater systems, Aqua's Residential wastewater rates are comprised of several varying rate structures including fixed customer or EDU charges plus usage charges, unmetered flat rates, and structures with minimum usage allowances. Generally speaking, Aqua proposes to begin (or continue) movement to unified customer charges for metered customers. In this regard, the Company proposes to increase the current Rate Zone 1 5/8" meter customer charge from $31.00 to $39.10 per month.

Q. DOES MS. HEPPENSTALL PROVIDE ANY SUPPORT FOR HER RECOMMENDED $8.10 INCREASE IN THE RATE ZONE 1 5/8" RESIDENTIAL CUSTOMER CHARGE?

A. No. However, her Excel spreadsheet for the legacy system wastewater cost of service study provided in Exhibit 5-B, Part I does show her functionalized wastewater customer costs. Ms. Heppenstall's analysis indicates a total Residential customer cost of $2,532,772.[14] When her customer cost is divided by the 15,857 Residential wastewater customers, a monthly Residential customer cost of $13.31 is indicated.

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE RESIDENTIAL CUSTOMER CHARGE FOR THE LEGACY SYSTEM (RATE ZONE 1)?

A. Based on Ms. Heppenstall's own analysis, there is no support for an increase in the Residential fixed monthly customer charge for Rate Zone 1. Although a reduction to this fixed monthly customer charge could be warranted, I recommend that the current customer charge of $31.00 per month be maintained.

Q. WHAT ARE THE COMPANY'S PROPOSED CHANGES TO THE LIMERICK RESIDENTIAL RATE STRUCTURE?

[14] Customer Facilities costs of $808,764 and Customer Accounting costs of $1,724,008.

A. Currently, Limerick has a usage allowance of 2,493 gallons per month in their rate structure. Aqua proposes to eliminate this usage allowance such that all wastewater will be subject to usage charges. In addition, Ms. Heppenstall recommends increasing the current customer charge from $28.10 to $39.48.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE RESIDENTIAL RATE STRUCTURE FOR LIMERICK?

A. I support the elimination of the usage allowance and recommend that the customer charge be increased from $28.10 to $31.00 which is the current Rate Zone 1 Residential customer charge. Eliminating the usage allowance is reasonable because it more fairly charges customers for their actual usage, sends proper price signals to customers and encourages conservation by giving customers greater control of their bill.

Q. WHAT ARE THE COMPANY'S PROPOSED CHANGES TO THE EAST BRADFORD RESIDENTIAL RATE STRUCTURE?

A. Currently, East Bradford's wastewater rate structures are unmetered. Aqua proposes to begin metering the majority of these customers such that there will be a customer (or EDU) charge plus a usage charge for most customers. The current flat rate for a single-family home is $68.09 whereas the Company proposes to implement a customer charge of $83.42 plus a usage charge for the newly metered customers. For townhomes, the current flat rate is $52.72 whereas the Company proposes a fixed EDU charge of $39.10 per month plus a usage charge.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE RESIDENTIAL RATE STRUCTURE FOR EAST BRADFORD?

A. Given the fact that Residential customers are currently billed on a flat rate and the Company proposes to move most of these customers to a usage-based rate, a higher customer charge of $83.42 plus a usage charge is unwarranted for low volume customers. As such, I recommend maintaining the current rate of $68.09 plus a flat usage charge for the newly metered customers.

Q. WHAT ARE THE COMPANY'S PROPOSED CHANGES TO THE CHELTENHAM RESIDENTIAL RATE STRUCTURE?

A. The Company proposes to maintain the current rate structure of a fixed customer (EDU) charge plus a flat usage rate. The current fixed EDU charge is $20.89 wherein the Company proposes to increase this rate to $28.21.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE RESIDENTIAL RATE STRUCTURE FOR CHELTENHAM?

A. Considering that the Company's proposed customer (EDU) charge of $28.21 is less than the current Rate Zone 1 customer charge of $31.00, I accept the Company's proposed increase to the Cheltenham Residential customer charge.

Q. WHAT ARE THE COMPANY'S PROPOSED CHANGES TO THE EAST NORRITON RESIDENTIAL RATE STRUCTURE?

A. Currently, East Norriton has a usage allowance of 1,333 gallons per month in their rate structure. Aqua proposes to eliminate this usage allowance such that all wastewater will be subject to usage charges. In addition, Ms. Heppenstall recommends increasing the current customer (EDU) charge from $21.08 to $32.37.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE RESIDENTIAL RATE STRUCTURE FOR EAST NORRITON?

A. I support the elimination of the usage allowance and recommend that the customer charge be increased from $21.08 to $31.00 which is the current Rate Zone 1 Residential customer charge.

Q. WHAT ARE THE COMPANY'S PROPOSED CHANGES TO THE NEW GARDEN RESIDENTIAL RATE STRUCTURE?

A. Currently, New Garden has a usage allowance of 1,667 gallons per month in their rate structure along with an inverted-block usage rate above the allowance. The Company proposes to maintain this usage rate structure and increase the fixed monthly customer charge from $37.64 to $51.71 per month.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE RESIDENTIAL RATE STRUCTURE FOR NEW GARDEN?

A. I recommend that the usage allowance (1,667 gallons per month) be eliminated, and this allowance be subject to usage charges in the first rate block. In addition, I recommend maintaining the current customer charge of $37.64.

Q. SEVERAL WASTEWATER RATE ZONES HAVE BOTH METERED AND UNMETERED RESIDENTIAL CUSTOMERS. HAVE YOU CONDUCTED A COMPARISON OF THOSE CUSTOMERS ON A FLAT RATE TO CUSTOMERS ON METERED RATES?

A. Yes. I have identified nine current wastewater rate zones that have both metered and unmetered Residential rates. I calculated the current average residential bill (before DSIC) for metered customers to the corresponding Residential flat rate for each rate zone. My analysis is provided in my Schedule GAW-8 and is summarized in the table below:

TABLE 8
Comparison of Metered & Unmetered Wastewater Rates

		Current Rates	
Current Rate Zone	Division	Average Monthly Metered Revenue Per Cust.	Current Unmetered Rate
RZ1	Bridlewood	$52	$61
RZ1A	Treasure Lake	$51	$56
RZ2	Emlenton	$62	$68
RZ3	Beech Mtn	$71	$80
RZ4	Honeycroft	$104	$100
RZ5	Avon Grove	$113	$177
RZ6	Masthope	$41	$44
Limerick		$40	$28
East Norriton	East Norriton	$38	$39

While there may be valid reasons for differences between a rate zone's unmetered rate and the average metered Residential rate, Table 8 indicates that this comparison

for some rate zones is very close (e.g., East Norriton). Other rate zones are relatively close (e.g., Rate Zone 1A and Rate Zone 6) and Rate Zone 5 exhibits significant differences between the average metered rate customer and flat rate customer.

In this regard, I recommend the Commission direct Aqua to study the reasonableness of its unmetered rates. If there are valid reasons for significant differences between metered and unmetered customers, the Company should fully explain why these differences are reasonable and if the study concludes that unmetered rates are unreasonably low or high, the Company should adjust the unmetered rates in its next rate case to the extent unmetered rates are expected to continue.

Q. IN THE LAST BASE RATE CASE, AQUA WAS REQUIRED TO CONDUCT A STUDY OF THE FEASIBILITY OF CAPPING NON-SEASONAL WASTEWATER RATES. DID THE COMPANY COMPLY WITH THIS REQUIREMENT?

A. Yes. Company witness Heppenstall sponsors the results of the wastewater study that capped Summer wastewater rates based on the average Winter usage. Ms. Heppenstall concluded that the capping mechanism would reduce billed wastewater usage by 38% and increase the bill for the average metered wastewater customer using 4,000 gallons per month by about 10.6%.[15]

Q. DO YOU HAVE ANY COMMENTS OR CONCERNS REGARDING THE COMPANY'S WASTEWATER CAPPED RATE STUDY?

A. Yes. First, any wastewater capping mechanism may not be feasible for some of Aqua's wastewater rate zones due to the fact that there are both seasonal and year-round customers. Second, from a conceptual standpoint, wastewater customers should not necessarily pay for wastewater services based simply on their water consumption primarily because some customers use a significant amount of water for irrigation that does not flow into the wastewater system.

[15] Heppenstall direct, page 22.

In my experience, I am familiar with two mechanisms to fairly treat those customers whose Summer irrigation use is significant. The first and most prevalent are capping mechanisms similar to the one considered in the study conducted by Aqua. However, more often than not, I have seen capping mechanisms with an admittedly arbitrary multiplier such as 125% of Winter usage or 150% of Winter usage as a cap. This is different from the Company's study wherein they used a multiplier of 100%; i.e., simply capped at average Winter usage.

The second mechanism I have seen is less common but, in my opinion, may be the most fair and equitable for Aqua. This mechanism allows individual customers to choose to have a separate irrigation water meter installed wherein their wastewater bills are then based on the net of total water usage less irrigation usage. I recommend the Company continue to study the feasibility of both approaches noted above: (1) a capping mechanism with a Winter multiplier greater than 100% and; (2) the feasibility to implement irrigation water meters on a customer-by-customer request basis.

Q. ARE THERE ANY OTHER RATE DESIGN ISSUES RELATING TO AQUA'S WATER AND WASTEWATER RATES?

A. Yes. OCA witness Roger Colton recommends certain changes to the design of rates for the proposed Bill Discount Program.

V. <u>WATER NEGOTIATED RATE CONTRACTS</u>

Q. DOES AQUA WATER HAVE ANY NEGOTIATED RATE CONTRACTS?

A. Yes. As set forth in Ms. Heppenstall's direct testimony, page 13 as well as Exhibit 5-A, Part II, Schedule 5, pages 20 through 23, the Company has several negotiated rate contracts. These negotiated rate contracts include those to other utilities for sales for resale as well as end-user contracts to Industrial and Public Authority customers.

Q. AS PART OF YOUR INVESTIGATION, DID YOU EXAMINE THE CONTRACTS ASSOCIATED WITH THESE CUSTOMERS?

A. Yes. In response to Highly Confidential OCA-III-7, the Company provided the contracts for each of its sales for resale contract customers and each of the end-user contract customers.

Q. ARE THERE ANY PROVISIONS IN THESE CONTRACTS THAT IMPACT THE LEVEL OF REVENUES DURING THE FULLY PROJECTED FUTURE TEST YEAR?

A. Yes. Several of these contracts contain annual rate escalation provisions. In examining the Company's proof of revenues contained in Exhibit 5-A, Part II, Schedule 5, I observed that the revenues for the negotiated rate contracts are stated as of March 31, 2021. However, the fully projected future test year ends March 31, 2023. Therefore, an adjustment to current revenues is appropriate to reflect the contractual escalation rates through March 31, 2023. I conducted a detailed analysis of each contract and escalated each contract's revenues to the end of the fully projected future test year.

Q. PLEASE SUMMARIZE YOUR WATER REVENUE ADJUSTMENT ASSOCIATED WITH NEGOTIATED RATE CONTRACTS.

A. My current revenue adjustment to reflect the fully projected future test year is $121,519 for the sales for resale contracts and $179,788 for the end-user negotiated rate contracts for a total current revenue adjustment of $301,307. I have provided this adjustment to OCA witness Ralph Smith, which is reflected in his revenue requirement recommendations. The details of my water negotiated rate revenue adjustment are provided in my Highly Confidential Schedule GAW-9, which consists of nine pages.

VI. PURCHASED WATER & ENERGY COST ADJUSTMENT MECHANISMS

Q. IS THE COMPANY PROPOSING RIDERS THAT WOULD GUARANTEE A RECOVERY OF ITS PURCHASED WATER AND PURCHASED ENERGY COSTS FOR WATER OPERATIONS?

A. Yes. Company witness Christopher Henkel proposes a new Purchased Water Adjustment ("PWA") Clause and an Energy Cost Adjustment Mechanism ("ECAM"). Under each of these proposed riders, the Company would be guaranteed recovery of its purchased water and purchased energy (electric and gas) costs.

Under the Company's proposals, a base amount of purchased water and energy (electric and gas) costs per unit of water consumption would be established in this case. Then, any increases or decreases would then result in surcharges or credits that would be trued-up.

Q. SHOULD AQUA'S PROPOSED PWA AND ECAM MECHANISMS BE APPROVED?

A. No.

Q. PLEASE EXPLAIN.

A. There are several reasons. First, it is well established that in developing fair and reasonable rates, a utility should be afforded the opportunity to recover its costs of providing service but not guaranteed such cost recovery. This is particularly relevant for Aqua in this case in that the Company is utilizing a fully projected future test year that anticipates the Company's future costs of providing service. These costs include a provision for projected, future purchased water and energy costs.

Second, Aqua's proposal clearly represents single-issue ratemaking. That is, the Company proposes to automatically change customers' prices (rates) due to changes in single cost components. Although a utility's "cost of service" is comprised of dozens of individual cost components, which can and will vary from expected values, single-issue ratemaking ignores the fact that as a single cost component changes in one direction, other components may change in the opposite

direction. Under single-issue ratemaking, countervailing changes in cost are ignored with ratepayers bearing all the risk of such changes in the single-issue rate, with no corresponding reward.

Third, Aqua's purchased water and purchased energy costs do not represent an extraordinarily large portion of the Company's total cost of service. Based on the Company's water cost of service study, Aqua projects purchased energy costs to be $8,264,734 and purchased water costs to be $4,148,780 for the fully-projected test year. Aqua's claimed total water cost of service is $575,026,137 (before Act 11 subsidy). As a result, Aqua projects that its purchased energy costs will amount to only about 1.4% ($8.265 million ÷ $575.026 million) of its total water cost of service and its purchased water costs will amount to only about 0.7% ($4.149 million ÷ $575.026 million) of its total water cost of service. Even though it may not be possible to perfectly predict future energy or water costs, the projected purchased energy and purchased water costs included in the Company's revenue requirement represents a very small portion of Aqua's cost of providing water service to customers.

Fourth, any approval of the PWA or ECAM automatic pass-through mechanisms would virtually eliminate any incentive for Aqua to efficiently minimize these costs going forward, including diligent negotiations with water suppliers as well as diligent shopping for electric and natural gas suppliers.

Finally, and with respect to the ECAM, if approved, there is no monetary incentive for Aqua to actively engage in conservation efforts in order to reduce its electricity or natural gas usages.

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes.

BACKGROUND & EXPERIENCE PROFILE

GLENN A. WATKINS

PRESIDENT/SENIOR ECONOMIST
TECHNICAL ASSOCIATES, INC.

EDUCATION

1982 - 1988	M.B.A., Virginia Commonwealth University, Richmond, Virginia
1980 - 1982	B.S., Economics; Virginia Commonwealth University
1976 - 1980	A.A., Economics; Richard Bland College of The College of William and Mary, Petersburg, Virginia

POSITIONS

Jan. 2017-Present	President/Senior Economist, Technical Associates, Inc.
Mar. 1993-Dec. 2016	Vice President/Senior Economist, Technical Associates, Inc. (Mar. 1993-June 1995 Traded as C. W. Amos of Virginia)
Apr. 1990-Mar. 1993	Principal/Senior Economist, Technical Associates, Inc.
Aug. 1987-Apr. 1990	Staff Economist, Technical Associates, Inc., Richmond, Virginia
Feb. 1987-Aug. 1987	Economist, Old Dominion Electric Cooperative, Richmond, Virginia
May 1984-Jan. 1987	Staff Economist, Technical Associates, Inc.
May 1982-May 1984	Economic Analyst, Technical Associates, Inc.
Sep. 1980-May 1982	Research Assistant, Technical Associates, Inc.

EXPERIENCE

I. Public Utility Regulation

A. Costing Studies -- Conducted, and presented as expert testimony, numerous embedded and marginal cost of service studies. Cost studies have been conducted for electric, gas, telecommunications, water, and wastewater utilities. Analyses and issues have included the evaluation and development of alternative cost allocation methods with particular emphasis on ratemaking implications of distribution plant classification and capacity cost allocation methodologies. Distribution plant classifications have been conducted using the minimum system and zero-intercept methods. Capacity cost allocations have been evaluated using virtually every recognized method of allocating demand related costs (e.g., single and multiple coincident peaks, non-coincident peaks, probability of loss of load, average and excess, and peak and average).

Embedded and marginal cost studies have been analyzed with respect to the seasonal and diurnal distribution of system energy and demand costs, as well as cost effective approaches to incorporating energy and demand losses for rate design purposes. Economic dispatch models have been evaluated to determine long range capacity requirements as well as system marginal energy costs for ratemaking purposes.

B. Rate Design Studies -- Analyzed, designed and provided expert testimony relating to rate structures for all retail rate classes, employing embedded and marginal cost studies. These rate structures have included flat rates, declining block rates, inverted block rates, hours use of demand blocking, lighting rates, and interruptible rates. Economic development and special industrial rates have been developed in recognition of the competitive environment for specific customers. Assessed alternative time differentiated rates with diurnal and seasonal pricing structures. Applied Ramsey (Inverse Elasticity) Pricing to marginal costs in order to adjust for embedded revenue requirement constraints.

GLENN A. WATKINS

C. Forecasting and System Profile Studies -- Development of long range energy (Kwh or Mcf) and demand forecasts for rural electric cooperatives and investor owned utilities. Analysis of electric plant operating characteristics for the determination of the most efficient dispatch of generating units on a system-wide basis. Factors analyzed include system load requirements, unit generating capacities, planned and unplanned outages, marginal energy costs, long term purchased capacity and energy costs, and short term power interchange agreements.

D. Cost of Capital Studies -- Analyzed and provided expert testimony on the costs of capital and proper capital structures for ratemaking purposes, for electric, gas, telephone, water, and wastewater utilities. Costs of capital have been applied to both actual and hypothetical capital structures. Cost of equity studies have employed comparable earnings, DCF, and CAPM analyses. Econometric analyses of adjustments required to electric utilities cost of equity due to the reduced risks of completing and placing new nuclear generating units into service.

E. Accounting Studies -- Performed and provided expert testimony for numerous accounting studies relating to revenue requirements and cost of service. Assignments have included original cost studies, cost of reproduction new studies, depreciation studies, lead-lag studies, Weather normalization studies, merger and acquisition issues and other rate base and operating income adjustments.

II. Transportation Regulation

A. Oil and Products Pipelines -- Conducted cost of service studies utilizing embedded costs, I.C.C. Valuation, and trended original cost. Development of computer models for cost of service studies utilizing the "Williams" (FERC 154-B) methodology. Performed alternative tariff designs, and dismantlement and restoration studies.

B. Railroads -- Analyses of costing studies using both embedded and marginal cost methodologies. Analyses of market dominance and cross-subsidization, including the implementation of differential pricing and inverse elasticity for various railroad commodities. Analyses of capital and operation costs required to operate "stand alone" railroads. Conducted cost of capital and revenue adequacy studies of railroads.

III. Insurance Studies

Conducted and presented expert testimony relating to market structure, performance, and profitability by line and sub-line of business within specific geographic areas, e.g. by state. These studies have included the determination of rates of return on Statutory Surplus and GAAP Equity by line - by state using the NAIC methodology, and comparison of individual insurance company performance vis a vis industry Country-Wide performance.

Conducted and presented expert testimony relating to rate regulation of workers' compensation, automobile, and professional malpractice insurance. These studies have included the determination of a proper profit and contingency factor utilizing an internal rate of return methodology, the development of a fair investment income rate, capital structure, cost of capital.

Other insurance studies have included testimony before the Virginia Legislature regarding proper regulatory structure of Credit Life and P&C insurance; the effects on competition and prices resulting from proposed insurance company mergers, maximum and minimum expense multiplier limits, determination of specific class code rate increase limits (swing limits); and investigation of the reasonableness of NCCI's administrative assigned risk plan and pool expenses.

GLENN A. WATKINS

IV. Anti-Trust and Commercial Business Damage Litigation

Analyses of alleged claims of attempts to monopolize, predatory pricing, unfair trade practices and economic losses. Assignments have involved definitions of relevant market areas(geographic and product) and performance of that market, the pricing and cost allocation practices of manufacturers, and the economic performance of manufacturers' distributors.

Performed and provided expert testimony relating to market impacts involving automobile and truck dealerships, incremental profitability, the present value of damages, diminution in value of business, market and dealer performance, future sales potential, optimal inventory levels, fair allocation of products, financial performance; and business valuations.

MEMBERSHIPS AND CERTIFICATIONS

Member, Association of Energy Engineers (1998)
Certified Rate of Return Analyst, Society of Utility and Regulatory Financial Analysts (1992)
Member, American Water Works Association
National Association of Business Economists
Richmond Association of Business Economists
National Economics Honor Society

AQUA PENNSYLVANIA WASTEWATER, INC.
OCA Wastewater Acquisition Adjustment Revenue Requirement

		Limerick	East Bradford	Cheltenham	East Norriton	New Garden	Total Acquired Wastewater
(1) Acq. Adjustment 1/		$18,219,511	-$473,948	$34,841,542	$12,342,993	$10,932,272	$75,862,370
(2) Depreciation 2/		$1,998,881	$158,552	$1,011,770	$952,641	$735,834	
(3) Total Net Plant 2/		$57,819,471	$5,338,372	$47,242,810	$25,224,222	$30,543,246	
(4) Non-Depr Plant 3/		$1,245,396	$382,538	$626,584	$340,711	$8,280,382	
(5) Net Depr Plant	(3) - (4)	$56,574,075	$4,955,834	$46,616,226	$24,883,511	$22,262,864	
(6) Depr % of Depr. Plant	(2)/(5)	3.5332%	3.1993%	2.1704%	3.8284%	3.3052%	
(7) Acq. Adj. to Depr. Exp.	(1) x (6)	$643,734	-$15,163	$756,209	$472,539	$361,334	$2,218,654
Capital Costs 4/							
(8) Wgtd. Cost of Debt		1.842%	1.842%	1.842%	1.842%	1.842%	
(9) Wgtd. Cost of Equity		5.800%	5.800%	5.800%	5.800%	5.800%	
(10) Interest	(1) x (8)	$335,603	-$8,730	$641,781	$227,358	$201,372	$1,397,385
(11) Equity Return	(1) x (9)	$1,056,663	-$27,487	$2,020,679	$715,847	$634,031	$4,399,733
(12) Income Taxes 5/		$429,337	-$11,168	$821,029	$290,858	$257,615	$1,787,671
(13) Subtotal Adjustment	(7)+(10)+(11)+(12)	$2,465,337	-$62,549	$4,239,698	$1,706,603	$1,454,353	$9,803,443
(14) PUC Assessments 6/		$15,680	-$398	$26,964	$10,854	$9,250	$62,350
(15) Bad Debts 6/		$47,828	-$1,213	$82,250	$33,108	$28,214	$190,187
(16) TOTAL REV. RQMT. ADJ.	(13)+(14)+(15)	$2,528,844	-$64,160	$4,348,913	$1,750,565	$1,491,817	$10,055,979

1/ Per OCA Section 1329 database.
2/ Per Witness Heppenstall Wastewater Cost of Service Study.
3/ Excludes Organization, Land and Land Rights.
4/ Aqua proposed capital structure, 4.00% COD, 10.75% ROE.
5/ State Income Taxes at 9.99% and Federal Income Taxes at 21%.
6/ PUC Assessment rate of 0.636%, Bad Debts expense rate of 1.194%, per Filing Schedule A-5.

AQUA PENNSYLVANIA, INC.
WASTEWATER OPERATIONS
AQUA & OCA PROPOSED INCREASES

Current Rate Zone	Division		Present Revenue	Aqua Proposed Increase	Acquisition Adjustment Transfer	OCA Increase	OCA Adjustment Percent	Aqua Pct. Increase	OCA Pct. Increase
RZ1	Media	$	2,366,537	$477,615	$477,615	$955,230	100.00%	20.2%	40.4%
RZ1-EDU	Bridlewood, Eagle Rock	$	950,029	$192,876	$192,876	$385,751	100.00%	20.3%	40.6%
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$	2,155,756	$717,746	$717,746	$1,435,493	100.00%	33.3%	66.6%
RZ1B	Penn Township	$	1,026,003	$78,677	$78,677	$157,354	100.00%	7.7%	15.3%
RZ2	Emlenton, River Crest, White Haven	$	1,824,726	$143,391	$143,391	$286,781	100.00%	7.9%	15.7%
RZ2	Pinecrest	$	68,921	-$3,282	-$3,282	-$6,565	100.00%	-4.8%	-9.5%
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$	3,224,393	$668,300	$668,300	$1,336,600	100.00%	20.7%	41.5%
RZ3	Woodloch Springs 1/	$	321,994	$20,920	$20,920	$41,840	100.00%	6.5%	13.0%
RZ4	Honeycroft, Lake Harmony, New Daleville	$	3,993,114	$761,910	$761,910	$1,523,820	100.00%	19.1%	38.2%
RZ5	Avon Grove, East Bradford, Little Washington	$	922,216	$165,759	$165,759	$331,518	100.00%	18.0%	35.9%
RZ5	Newlin Green	$	100,677	$4,906	$4,906	$9,813	100.00%	4.9%	9.7%
RZ6	Masthope	$	753,879	$155,015	$155,015	$310,030	100.00%	20.6%	41.1%
Bulk	Southdown Home	$	84,614	$0	$0	$0		0.0%	0.0%
Bulk	East Brandywine	$	1,403	$0	$0	$0		0.0%	0.0%
Bulk	Foster Township	$	270,065	-$92	-$92	-$185	100.00%	0.0%	-0.1%
Bulk	Dennison	$	57,989	-$20	-$20	-$40	100.00%	0.0%	-0.1%
Bulk	Upper Providence	$	542,530	$75,990	$75,990	$151,979	100.00%	14.0%	28.0%
Bulk	Elwyn	$	98,470	$13,794	$13,794	$27,588	100.00%	14.0%	28.0%
Bulk	Penn Lake	$	135,861	-$46	-$46	-$93	100.00%	0.0%	-0.1%
Bulk	East Side	$	89,099	-$13	-$13	-$25	100.00%	0.0%	0.0%
Total Legacy System		$	18,988,277	$3,473,445	$3,473,445	$6,946,890		18.3%	36.6%
Acquired	Limerick	$	3,969,765	$2,968,877	$2,218,467	$5,187,343	74.72%	74.79%	130.67%
Acquired	East Bradford	$	998,190	$358,379	$474,876	$833,254	132.51%	35.90%	83.48%
Acquired	Cheltenham	$	7,238,362	$2,541,306	$536,405	$3,077,711	21.11%	35.11%	42.52%
Acquired	East Norriton	$	2,916,336	$1,157,851	$1,629,768	$2,787,619	140.76%	39.70%	95.59%
Acquired	New Garden	$	2,871,698	$1,063,739	$732,086	$1,795,825	68.82%	37.04%	62.54%
Total Newly Acquired Systems		$	17,994,351	$8,090,152	$5,591,600	$13,681,752		44.96%	76.03%
Total Aqua Wastewater		$	36,982,628	$11,563,597	$9,065,045	$20,628,642		31.27%	55.78%

1/ Excludes $19,046 increase to contract revenues.

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED CLASS REVENUE ALLOCATIONS

Rate		Residential		Commercial		Industrial		Public		Bulk		Contracts		Total Wastewater	
Zone	Division	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA
RZ1	Media	$ 255,738	$ 511,477	$ 193,095	$ 386,190	$ 150	$ 300	$ 28,632	$ 57,264	$ -	$ -	$ -	$ -	$ 477,615	$ 955,230
RZ1-EDU	Bridlewood, Eagle Rock	$ 183,847	$ 367,694	$ 9,029	$ 18,058	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 192,876	$ 385,751
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$ 448,992	$ 897,983	$ 268,755	$ 537,509	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 717,746	$ 1,435,493
RZ1B	Penn Township	$ 130,584	$ 261,169	$ (51,908)	$ (103,815)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 78,677	$ 157,354
RZ2	Emlenton, River Crest, White Haven	$ 106,135	$ 212,269	$ 37,256	$ 74,512	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 143,391	$ 286,781
RZ2	Pinecrest	$ -	$ -	$ (3,282)	$ (6,565)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (3,282)	$ (6,565)
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$ 602,150	$ 1,204,301	$ 66,150	$ 132,299	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 668,300	$ 1,336,600
RZ3	Woodloch Springs	$ -	$ -	$ 1,874	$ 3,747	$ -	$ -	$ -	$ -	$ -	$ -	$ 19,046	$ 19,046	$ 20,920	$ 22,794
RZ4	Honeycroft, Lake Harmony, New Daleville	$ 609,261	$ 1,218,523	$ 152,648	$ 305,297	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 761,910	$ 1,523,820
RZ5	Avon Grove, East Bradford, Little Washington	$ 141,544	$ 283,088	$ 24,215	$ 48,431	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 165,759	$ 331,518
RZ5	Newlin Green	$ 4,906	$ 9,813	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,906	$ 9,813
RZ6	Masthope	$ 152,790	$ 305,581	$ 2,225	$ 4,449	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 155,015	$ 310,030
Bulk	Southdown Home	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bulk	East Brandywine	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bulk	Foster Township	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (92)	$ (185)	$ -	$ -	$ (92)	$ (185)
Bulk	Dennison	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (20)	$ (40)	$ -	$ -	$ (20)	$ (40)
Bulk	Upper Providence	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 75,990	$ 151,979	$ -	$ -	$ 75,990	$ 151,979
Bulk	Elwyn	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,794	$ 27,588	$ -	$ -	$ 13,794	$ 27,588
Bulk	Penn Lake	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (46)	$ (93)	$ -	$ -	$ (46)	$ (93)
Bulk	East Side	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (13)	$ (25)	$ -	$ -	$ (13)	$ (25)
Total Legacy System		$ 2,635,948	$ 5,271,896	$ 700,056	$ 1,400,112	$ 150	$ 300	$ 28,632	$ 57,264	$ 89,612	$ 179,225	$ 19,046	$ 19,046	$ 3,473,445	$ 6,927,843
Acquired	Limerick	$ 2,210,449	$ 3,862,188	$ 754,336	$ 1,318,007	$ -	$ -	$ 4,091	$ 7,149	$ -	$ -	$ -	$ -	$ 2,968,877	$ 5,187,343
Acquired	East Bradford	$ 280,650	$ 652,530	$ 76,616	$ 178,136	$ -	$ -	$ 1,113	$ 2,588	$ -	$ -	$ -	$ -	$ 358,379	$ 833,255
Acquired	Cheltenham	$ 1,549,865	$ 1,877,002	$ 972,944	$ 1,178,307	$ 978	$ 1,185	$ 17,519	$ 21,217	$ -	$ -	$ -	$ -	$ 2,541,306	$ 3,077,711
Acquired	East Norriton	$ 1,078,598	$ 2,596,809	$ 79,253	$ 190,809	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,157,851	$ 2,787,618
Acquired	New Garden	$ 856,787	$ 1,446,444	$ 206,952	$ 349,381	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,063,739	$ 1,795,825
Total Newly Acquired Systems		$ 5,976,349	$ 10,434,973	$ 2,090,101	$ 3,214,640	$ 978	$ 1,185	$ 22,723	$ 30,953	$ -	$ -	$ -	$ -	$ 8,090,152	$ 13,681,752
Total Aqua Wastewater		$ 8,612,297	$ 15,706,869	$ 2,790,157	$ 4,614,752	$ 1,128	$ 1,484	$ 51,355	$ 88,217	$ 89,612	$ 179,225	$ 19,046	$ 19,046	$ 11,563,597	$ 20,609,595

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
RESIDENTIAL

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Media	$ 1,268,729	$ 255,738	$ 511,477	$ 1,524,467	$ 1,780,205	20.16%	40.31%
RZ1-EDU	Bridlewood, Eagle Rock	$ 905,367	$ 183,847	$ 367,694	$ 1,089,214	$ 1,273,061	20.31%	40.61%
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$ 1,491,621	$ 448,992	$ 897,983	$ 1,940,613	$ 2,389,604	30.10%	60.20%
RZ1B	Penn Township	$ 565,126	$ 130,584	$ 261,169	$ 695,711	$ 826,295	23.11%	46.21%
RZ2	Emlenton, River Crest, White Haven	$ 1,393,629	$ 106,135	$ 212,269	$ 1,499,764	$ 1,605,898	7.62%	15.23%
RZ2	Pinecrest	$ -	$ -	$ -	$ -	$ -		
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$ 2,954,181	$ 602,150	$ 1,204,301	$ 3,556,331	$ 4,158,482	20.38%	40.77%
RZ3	Woodloch Springs	$ -	$ -	$ -	$ -	$ -		
RZ4	Honeycroft, Lake Harmony, New Daleville	$ 3,191,687	$ 609,261	$ 1,218,523	$ 3,800,948	$ 4,410,210	19.09%	38.18%
RZ5	Avon Grove, East Bradford, Little Washington	$ 805,463	$ 141,544	$ 283,088	$ 947,006	$ 1,088,550	17.57%	35.15%
RZ5	Newlin Green	$ 100,677	$ 4,906	$ 9,813	$ 105,584	$ 110,490	4.87%	9.75%
RZ6	Masthope	$ 742,916	$ 152,790	$ 305,581	$ 895,706	$ 1,048,497	20.57%	41.13%
Bulk	Southdown Home	$ -	$ -	$ -	$ -	$ -		
Bulk	East Brandywine	$ -	$ -	$ -	$ -	$ -		
Bulk	Foster Township	$ -	$ -	$ -	$ -	$ -		
Bulk	Dennison	$ -	$ -	$ -	$ -	$ -		
Bulk	Upper Providence	$ -	$ -	$ -	$ -	$ -		
Bulk	Elwyn	$ -	$ -	$ -	$ -	$ -		
Bulk	Penn Lake	$ -	$ -	$ -	$ -	$ -		
Bulk	East Side	$ -	$ -	$ -	$ -	$ -		
Total Legacy System		$ 13,419,396	$ 2,635,948	$ 5,271,896	$ 16,055,344	$ 18,691,292	19.64%	39.29%
Acquired	Limerick	$ 2,758,337	$ 2,210,449	$ 3,862,188	$ 4,968,786	$ 6,620,525	80.14%	140.02%
Acquired	East Bradford	$ 864,242	$ 280,650	$ 652,530	$ 1,144,892	$ 1,516,772	32.47%	75.50%
Acquired	Cheltenham	$ 4,415,789	$ 1,549,865	$ 1,877,002	$ 5,965,654	$ 6,292,791	35.10%	42.51%
Acquired	East Norriton	$ 2,099,876	$ 1,078,598	$ 2,596,809	$ 3,178,473	$ 4,696,685	51.36%	123.66%
Acquired	New Garden	$ 2,291,038	$ 856,787	$ 1,446,444	$ 3,147,825	$ 3,737,482	37.40%	63.13%
Total Newly Acquired Systems		$ 12,429,282	$ 5,976,349	$ 10,434,973	$ 18,405,631	$ 22,864,255	48.08%	83.95%
Total Aqua Wastewater		$ 25,848,678	$ 8,612,297	$ 15,706,869	$ 34,460,975	$ 41,555,547	33.32%	60.76%

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
COMMERCIAL

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Media	$ 955,347	$ 193,095	$ 386,190	$ 1,148,442	$ 1,341,537	20.21%	40.42%
RZ1-EDU	Bridlewood, Eagle Rock	$ 44,662	$ 9,029	$ 18,058	$ 53,691	$ 62,720	20.22%	40.43%
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$ 664,135	$ 268,755	$ 537,509	$ 932,890	$ 1,201,645	40.47%	80.93%
RZ1B	Penn Township	$ 460,877	$ (51,908)	$ (103,815)	$ 408,969	$ 357,062	-11.26%	-22.53%
RZ2	Emlenton, River Crest, White Haven	$ 431,097	$ 37,256	$ 74,512	$ 468,353	$ 505,609	8.64%	17.28%
RZ2	Pinecrest	$ 68,921	$ (3,282)	$ (6,565)	$ 65,639	$ 62,356	-4.76%	-9.52%
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$ 270,212	$ 66,150	$ 132,299	$ 336,361	$ 402,511	24.48%	48.96%
RZ3	Woodloch Springs	$ 9,240	$ 1,874	$ 3,747	$ 11,114	$ 12,987	20.28%	40.56%
RZ4	Honeycroft, Lake Harmony, New Daleville	$ 801,427	$ 152,648	$ 305,297	$ 954,076	$ 1,106,724	19.05%	38.09%
RZ5	Avon Grove, East Bradford, Little Washington	$ 116,754	$ 24,215	$ 48,431	$ 140,969	$ 165,185	20.74%	41.48%
RZ5	Newlin Green	$ -	$ -	$ -	$ -	$ -		
RZ6	Masthope	$ 10,963	$ 2,225	$ 4,449	$ 13,188	$ 15,412	20.29%	40.58%
Bulk	Southdown Home	$ -	$ -	$ -	$ -	$ -		
Bulk	East Brandywine	$ -	$ -	$ -	$ -	$ -		
Bulk	Foster Township	$ -	$ -	$ -	$ -	$ -		
Bulk	Dennison	$ -	$ -	$ -	$ -	$ -		
Bulk	Upper Providence	$ -	$ -	$ -	$ -	$ -		
Bulk	Elwyn	$ -	$ -	$ -	$ -	$ -		
Bulk	Penn Lake	$ -	$ -	$ -	$ -	$ -		
Bulk	East Side	$ -	$ -	$ -	$ -	$ -		
Total Legacy System		$ 3,833,635	$ 700,056	$ 1,400,112	$ 4,533,691	$ 5,233,747	18.26%	36.52%
Acquired	Limerick	$ 1,198,307	$ 754,336	$ 1,318,007	$ 1,952,644	$ 2,516,315	62.95%	109.99%
Acquired	East Bradford	$ 132,205	$ 76,616	$ 178,136	$ 208,820	$ 310,341	57.95%	134.74%
Acquired	Cheltenham	$ 2,771,955	$ 972,944	$ 1,178,307	$ 3,744,899	$ 3,950,262	35.10%	42.51%
Acquired	East Norriton	$ 816,460	$ 79,253	$ 190,809	$ 895,713	$ 1,007,269	9.71%	23.37%
Acquired	New Garden	$ 580,660	$ 206,952	$ 349,381	$ 787,612	$ 930,041	35.64%	60.17%
Total Newly Acquired Systems		$ 5,499,588	$ 2,090,101	$ 3,214,640	$ 7,589,689	$ 8,714,228	38.00%	58.45%
Total Aqua Wastewater		$ 9,333,223	$ 2,790,157	$ 4,614,752	$ 12,123,380	$ 13,947,975	29.89%	49.44%

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
INDUSTRIAL

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Media	$ 743	$ 150	$ 300	$ 893	$ 1,043	20.15%	40.30%
RZ1-EDU	Bridlewood, Eagle Rock	$ -	$ -	$ -	$ -	$ -		
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$ -	$ -	$ -	$ -	$ -		
RZ1B	Penn Township	$ -	$ -	$ -	$ -	$ -		
RZ2	Emlenton, River Crest, White Haven	$ -	$ -	$ -	$ -	$ -		
RZ2	Pinecrest	$ -	$ -	$ -	$ -	$ -		
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$ -	$ -	$ -	$ -	$ -		
RZ3	Woodloch Springs	$ -	$ -	$ -	$ -	$ -		
RZ4	Honeycroft, Lake Harmony, New Daleville	$ -	$ -	$ -	$ -	$ -		
RZ5	Avon Grove, East Bradford, Little Washington	$ -	$ -	$ -	$ -	$ -		
RZ5	Newlin Green	$ -	$ -	$ -	$ -	$ -		
RZ6	Masthope	$ -	$ -	$ -	$ -	$ -		
Bulk	Southdown Home	$ -	$ -	$ -	$ -	$ -		
Bulk	East Brandywine	$ -	$ -	$ -	$ -	$ -		
Bulk	Foster Township	$ -	$ -	$ -	$ -	$ -		
Bulk	Dennison	$ -	$ -	$ -	$ -	$ -		
Bulk	Upper Providence	$ -	$ -	$ -	$ -	$ -		
Bulk	Elwyn	$ -	$ -	$ -	$ -	$ -		
Bulk	Penn Lake	$ -	$ -	$ -	$ -	$ -		
Bulk	East Side	$ -	$ -	$ -	$ -	$ -		
Total Legacy System		$ 743	$ 150	$ 300	$ 893	$ 1,043	20.15%	40.30%
Acquired	Limerick	$ -	$ -	$ -	$ -	$ -		
Acquired	East Bradford	$ -	$ -	$ -	$ -	$ -		
Acquired	Cheltenham	$ 2,787	$ 978	$ 1,185	$ 3,766	$ 3,972	35.10%	42.51%
Acquired	East Norriton	$ -	$ -	$ -	$ -	$ -		
Acquired	New Garden	$ -	$ -	$ -	$ -	$ -		
Total Newly Acquired Systems		$ 2,787	$ 978	$ 1,185	$ 3,766	$ 3,972	35.10%	42.51%
Total Aqua Wastewater		$ 3,530	$ 1,128	$ 1,484	$ 4,659	$ 5,015	31.96%	42.05%

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
PUBLIC

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Media	$ 141,718	$ 28,632	$ 57,264	$ 170,350	$ 198,982	20.20%	40.41%
RZ1-EDU	Bridlewood, Eagle Rock	$ -	$ -	$ -	$ -	$ -		
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$ -	$ -	$ -	$ -	$ -		
RZ1B	Penn Township	$ -	$ -	$ -	$ -	$ -		
RZ2	Emlenton, River Crest, White Haven	$ -	$ -	$ -	$ -	$ -		
RZ2	Pinecrest	$ -	$ -	$ -	$ -	$ -		
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$ -	$ -	$ -	$ -	$ -		
RZ3	Woodloch Springs	$ -	$ -	$ -	$ -	$ -		
RZ4	Honeycroft, Lake Harmony, New Daleville	$ -	$ -	$ -	$ -	$ -		
RZ5	Avon Grove, East Bradford, Little Washington	$ -	$ -	$ -	$ -	$ -		
RZ5	Newlin Green	$ -	$ -	$ -	$ -	$ -		
RZ6	Masthope	$ -	$ -	$ -	$ -	$ -		
Bulk	Southdown Home	$ -	$ -	$ -	$ -	$ -		
Bulk	East Brandywine	$ -	$ -	$ -	$ -	$ -		
Bulk	Foster Township	$ -	$ -	$ -	$ -	$ -		
Bulk	Dennison	$ -	$ -	$ -	$ -	$ -		
Bulk	Upper Providence	$ -	$ -	$ -	$ -	$ -		
Bulk	Elwyn	$ -	$ -	$ -	$ -	$ -		
Bulk	Penn Lake	$ -	$ -	$ -	$ -	$ -		
Bulk	East Side	$ -	$ -	$ -	$ -	$ -		
Total Legacy System		$ 141,718	$ 28,632	$ 57,264	$ 170,350	$ 198,982	20.20%	40.41%
Acquired	Limerick	$ 13,120	$ 4,091	$ 7,149	$ 17,211	$ 20,269	31.18%	54.49%
Acquired	East Bradford	$ 1,744	$ 1,113	$ 2,588	$ 2,857	$ 4,332	63.81%	148.37%
Acquired	Cheltenham	$ 47,830	$ 17,519	$ 21,217	$ 65,349	$ 69,047	36.63%	44.36%
Acquired	East Norriton	$ -	$ -	$ -	$ -	$ -		
Acquired	New Garden	$ -	$ -	$ -	$ -	$ -		
Total Newly Acquired Systems		$ 62,694	$ 22,723	$ 30,953	$ 85,418	$ 93,648	36.24%	49.37%
Total Aqua Wastewater		$ 204,413	$ 51,355	$ 88,217	$ 255,768	$ 292,630	25.12%	43.16%

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
BULK

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Media		$ -	$ -	$ -	$ -		
RZ1-EDU	Bridlewood, Eagle Rock		$ -	$ -	$ -	$ -		
RZ1A	Tres. Lake, Valley Forge, Bunker Hill		$ -	$ -	$ -	$ -		
RZ1B	Penn Township		$ -	$ -	$ -	$ -		
RZ2	Emlenton, River Crest, White Haven		$ -	$ -	$ -	$ -		
RZ2	Pinecrest		$ -	$ -	$ -	$ -		
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes		$ -	$ -	$ -	$ -		
RZ3	Woodloch Springs		$ -	$ -	$ -	$ -		
RZ4	Honeycroft, Lake Harmony, New Daleville		$ -	$ -	$ -	$ -		
RZ5	Avon Grove, East Bradford, Little Washington		$ -	$ -	$ -	$ -		
RZ5	Newlin Green		$ -	$ -	$ -	$ -		
RZ6	Masthope		$ -	$ -	$ -	$ -		
Bulk	Southdown Home	$ 84,614	$ -	$ -	$ 84,614	$ 84,614	0.00%	0.00%
Bulk	East Brandywine	$ 1,403	$ -	$ -	$ 1,403	$ 1,403	0.00%	0.00%
Bulk	Foster Township	$ 270,065	$ (92)	$ (185)	$ 269,972	$ 269,880	-0.03%	-0.07%
Bulk	Dennison	$ 57,989	$ (20)	$ (40)	$ 57,969	$ 57,950	-0.03%	-0.07%
Bulk	Upper Providence	$ 542,530	$ 75,990	$ 151,979	$ 618,520	$ 694,510	14.01%	28.01%
Bulk	Elwyn	$ 98,470	$ 13,794	$ 27,588	$ 112,264	$ 126,058	14.01%	28.02%
Bulk	Penn Lake	$ 135,861	$ (46)	$ (93)	$ 135,814	$ 135,768	-0.03%	-0.07%
Bulk	East Side	$ 89,099	$ (13)	$ (25)	$ 89,087	$ 89,074	-0.01%	-0.03%
Total Legacy System		$ 1,280,031	$ 89,612	$ 179,225	$ 1,369,644	$ 1,459,256	7.00%	14.00%
Acquired	Limerick	$ -	$ -	$ -	$ -	$ -		
Acquired	East Bradford	$ -	$ -	$ -	$ -	$ -		
Acquired	Cheltenham	$ -	$ -	$ -	$ -	$ -		
Acquired	East Norriton	$ -	$ -	$ -	$ -	$ -		
Acquired	New Garden	$ -	$ -	$ -	$ -	$ -		
Total Newly Acquired Systems		$ -	$ -	$ -	$ -	$ -		
Total Aqua Wastewater		$ 1,280,031	$ 89,612	$ 179,225	$ 1,369,644	$ 1,459,256	7.00%	14.00%

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
CONTRACTS

Rate Zone	Division	Present Revenues	Proposed Increase		Proposed Revenues		% Increase	
			Aqua	OCA	Aqua	OCA	Aqua	OCA
RZ1	Media		$ -	$ -	$ -	$ -		
RZ1-EDU	Bridlewood, Eagle Rock		$ -	$ -	$ -	$ -		
RZ1A	Tres. Lake, Valley Forge, Bunker Hill		$ -	$ -	$ -	$ -		
RZ1B	Penn Township		$ -	$ -	$ -	$ -		
RZ2	Emlenton, River Crest, White Haven		$ -	$ -	$ -	$ -		
RZ2	Pinecrest		$ -	$ -	$ -	$ -		
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes		$ -	$ -	$ -	$ -		
RZ3	Woodloch Springs	$ 312,754	$ 19,046	$ 19,046	$ 331,800	$ 331,800	6.09%	6.09%
RZ4	Honeycroft, Lake Harmony, New Daleville		$ -	$ -	$ -	$ -		
RZ5	Avon Grove, East Bradford, Little Washington		$ -	$ -	$ -	$ -		
RZ5	Newlin Green		$ -	$ -	$ -	$ -		
RZ6	Masthope		$ -	$ -	$ -	$ -		
Bulk	Southdown Home		$ -	$ -	$ -	$ -		
Bulk	East Brandywine		$ -	$ -	$ -	$ -		
Bulk	Foster Township		$ -	$ -	$ -	$ -		
Bulk	Dennison		$ -	$ -	$ -	$ -		
Bulk	Upper Providence		$ -	$ -	$ -	$ -		
Bulk	Elwyn		$ -	$ -	$ -	$ -		
Bulk	Penn Lake		$ -	$ -	$ -	$ -		
Bulk	East Side		$ -	$ -	$ -	$ -		
Total Legacy System		$ 312,754	$ 19,046	$ 19,046	$ 331,800	$ 331,800	6.09%	6.09%
Acquired	Limerick	$ -	$ -	$ -	$ -	$ -		
Acquired	East Bradford	$ -	$ -	$ -	$ -	$ -		
Acquired	Cheltenham	$ -	$ -	$ -	$ -	$ -		
Acquired	East Norriton	$ -	$ -	$ -	$ -	$ -		
Acquired	New Garden	$ -	$ -	$ -	$ -	$ -		
Total Newly Acquired Systems		$ -	$ -	$ -	$ -	$ -		
Total Aqua Wastewater		$ 312,754	$ 19,046	$ 19,046	$ 331,800	$ 331,800	6.09%	6.09%

AQUA PENNSYLVANIA, INC.
WASTERWATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
TOTAL

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Media	$ 2,366,537	$ 477,615	$ 955,230	$ 2,844,152	$ 3,321,767	20.18%	40.36%
RZ1-EDU	Bridlewood, Eagle Rock	$ 950,029	$ 192,876	$ 385,751	$ 1,142,905	$ 1,335,781	20.30%	40.60%
RZ1A	Tres. Lake, Valley Forge, Bunker Hill	$ 2,155,756	$ 717,746	$ 1,435,493	$ 2,873,503	$ 3,591,249	33.29%	66.59%
RZ1B	Penn Township	$ 1,026,003	$ 78,677	$ 157,354	$ 1,104,680	$ 1,183,357	7.67%	15.34%
RZ2	Emlenton, River Crest, White Haven	$ 1,824,726	$ 143,391	$ 286,781	$ 1,968,116	$ 2,111,507	7.86%	15.72%
RZ2	Pinecrest	$ 68,921	$ (3,282)	$ (6,565)	$ 65,639	$ 62,356	-4.76%	-9.52%
RZ3	Beech Mtn, Deerfield Knoll, Laurel Lakes	$ 3,224,393	$ 668,300	$ 1,336,600	$ 3,892,693	$ 4,560,993	20.73%	41.45%
RZ3	Woodloch Springs	$ 321,994	$ 20,920	$ 22,794	$ 342,914	$ 344,787	6.50%	7.08%
RZ4	Honeycroft, Lake Harmony, New Daleville	$ 3,993,114	$ 761,910	$ 1,523,820	$ 4,755,024	$ 5,516,934	19.08%	38.16%
RZ5	Avon Grove, East Bradford, Little Washington	$ 922,216	$ 165,759	$ 331,518	$ 1,087,976	$ 1,253,735	17.97%	35.95%
RZ5	Newlin Green	$ 100,677	$ 4,906	$ 9,813	$ 105,584	$ 110,490	4.87%	9.75%
RZ6	Masthope	$ 753,879	$ 155,015	$ 310,030	$ 908,894	$ 1,063,909	20.56%	41.12%
Bulk	Southdown Home	$ 84,614	$ -	$ -	$ 84,614	$ 84,614	0.00%	0.00%
Bulk	East Brandywine	$ 1,403	$ -	$ -	$ 1,403	$ 1,403	0.00%	0.00%
Bulk	Foster Township	$ 270,065	$ (92)	$ (185)	$ 269,972	$ 269,880	-0.03%	-0.07%
Bulk	Dennison	$ 57,989	$ (20)	$ (40)	$ 57,969	$ 57,950	-0.03%	-0.07%
Bulk	Upper Providence	$ 542,530	$ 75,990	$ 151,979	$ 618,520	$ 694,510	14.01%	28.01%
Bulk	Elwyn	$ 98,470	$ 13,794	$ 27,588	$ 112,264	$ 126,058	14.01%	28.02%
Bulk	Penn Lake	$ 135,861	$ (46)	$ (93)	$ 135,814	$ 135,768	-0.03%	-0.07%
Bulk	East Side	$ 89,099	$ (13)	$ (25)	$ 89,087	$ 89,074	-0.01%	-0.03%
Total Legacy System		$ 18,988,277	$ 3,473,445	$ 6,927,843	$ 22,461,722	$ 25,916,120	18.29%	36.48%
Acquired	Limerick	$ 3,969,765	$ 2,968,877	$ 5,187,343	$ 6,938,641	$ 9,157,108	74.79%	130.67%
Acquired	East Bradford	$ 998,190	$ 358,379	$ 833,255	$ 1,356,569	$ 1,831,445	35.90%	83.48%
Acquired	Cheltenham	$ 7,238,362	$ 2,541,306	$ 3,077,711	$ 9,779,668	$ 10,316,073	35.11%	42.52%
Acquired	East Norriton	$ 2,916,336	$ 1,157,851	$ 2,787,618	$ 4,074,187	$ 5,703,953	39.70%	95.59%
Acquired	New Garden	$ 2,871,698	$ 1,063,739	$ 1,795,825	$ 3,935,437	$ 4,667,523	37.04%	62.54%
Total Newly Acquired Systems		$ 17,994,351	$ 8,090,152	$ 13,681,752	$ 26,084,503	$ 31,676,103	44.96%	76.03%
Total Aqua Wastewater		$ 36,982,628	$ 11,563,597	$ 20,609,595	$ 48,546,225	$ 57,592,223	31.27%	55.73%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED INCREASES

		Aqua Proposed				OCA Proposed		
Rate Zone	Division	Total Increase	Public Fire Increase	Contract Increase	Total Less Public Fire & Contracts	Acquisition Adjustment Transfer	Increase Excluding Public Fire & Contracts	Adjustment Percent
RZ1	Main	$ 82,541,592	$ 1,292,203	$ 303,705	$ 80,945,684	$ (8,678,403)	$ 72,267,282	-10.72%
RZ1	CC Gardens,Sand Springs	$ 283,902	$ -	$ -	$ 283,902	$ (30,438)	$ 253,464	-10.72%
RZ1	Beech Mtn	$ 141,585	$ -	$ -	$ 141,585	$ (15,180)	$ 126,405	-10.72%
RZ1	Bristol	$ 523,599	$ 6,760	$ -	$ 516,839	$ (55,412)	$ 461,428	-10.72%
RZ1	Mifflin	$ 153,841	$ 1,949	$ -	$ 151,892	$ (16,285)	$ 135,607	-10.72%
RZ1	Mt. Jewett	$ 62,044	$ 1,680	$ -	$ 60,364	$ (6,472)	$ 53,892	-10.72%
RZ1	Robin Hood Lakes	$ 48,520	$ -	$ -	$ 48,520	$ (5,202)	$ 43,318	-10.72%
RZ2	Main	$ 831,655	$ -	$ -	$ 831,655	$ (89,164)	$ 742,491	-10.72%
RZ2	Chalfont	$ 494,167	$ 21,850	$ -	$ 472,317	$ (50,638)	$ 421,678	-10.72%
RZ2	Concord Park	$ 61,128	$ 230	$ -	$ 60,898	$ (6,529)	$ 54,369	-10.72%
RZ2	Treasure Lake	$ 422,836	$ -	$ -	$ 422,836	$ (45,333)	$ 377,502	-10.72%
RZ3	All Divisions	$ 548,619	$ -	$ -	$ 548,619	$ (58,819)	$ 489,800	-10.72%
BH	Bunker Hill	$ 10,096	$ -	$ -	$ 10,096	$ (1,082)	$ 9,014	-10.72%
PH	Phoenixville	$ 61,153	$ 4,361	$ -	$ 56,792	$ (6,089)	$ 50,703	-10.72%
Total Water Sales		$ 86,184,737	$ 1,329,034	$ 303,705	$ 84,551,997	$ (9,065,045)	$ 75,486,952	-10.72%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED CLASS REVENUE ALLOCATIONS

Rate Zone	Division	OCA Adjustment Percent	Residential		Commercial		Industrial		Public		Resale		Private Fire		Public Fire		Contracts		Total Water	
			Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA	Aqua	OCA
RZ1	Main	-10.72%	$55,340,357	$49,407,170	$18,704,400	$16,699,052	$3,066,342	$2,737,592	$1,342,978	$1,198,994	$2,035	$1,817	$2,489,572	$2,222,658	$1,292,203	$1,292,203	$303,705	$303,705	$82,541,593	$73,863,190
RZ1	CC Gardens,Sand Springs	-10.72%	$ 278,591	$ 248,722	$ 5,311	$ 4,742	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 283,902	$ 253,464
RZ1	Beech Mtn	-10.72%	$ 132,948	$ 118,694	$ 8,637	$ 7,711	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 141,585	$ 126,405
RZ1	Bristol	-10.72%	$ 87,620	$ 78,226	$ 131,184	$ 117,119	$ -	$ -	$ -	$ -	$ -	$ -	$ 298,035	$ 266,082	$ 6,760	$ 6,760	$ -	$ -	$ 523,599	$ 468,188
RZ1	Mifflin	-10.72%	$ 129,690	$ 115,785	$ 22,202	$ 19,822	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,949	$ 1,949	$ -	$ -	$ 153,841	$ 137,556
RZ1	Mt. Jewett	-10.72%	$ 60,364	$ 53,892	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,680	$ 1,680	$ -	$ -	$ 62,044	$ 55,572
RZ1	Robin Hood Lakes	-10.72%	$ 48,520	$ 43,318	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 48,520	$ 43,318
RZ2	Main	-10.72%	$ 708,358	$ 632,413	$ 80,323	$ 71,712	$ 8,122	$ 7,251	$ 15,915	$ 14,208	$ -	$ -	$ 18,937	$ 16,907	$ -	$ -	$ -	$ -	$ 831,655	$ 742,491
RZ2	Chalfont	-10.72%	$ 472,317	$ 421,678	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 21,850	$ 21,850	$ -	$ -	$ 494,167	$ 443,529
RZ2	Concord Park	-10.72%	$ 35,090	$ 31,328	$ 22,525	$ 20,110	$ -	$ -	$ 3,282	$ 2,930	$ -	$ -	$ -	$ -	$ 230	$ 230	$ -	$ -	$ 61,128	$ 54,599
RZ2	Treasure Lake	-10.72%	$ 359,607	$ 321,053	$ 63,229	$ 56,450	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 422,836	$ 377,502
RZ3	All Divisions	-10.72%	$ 501,936	$ 448,122	$ 30,774	$ 27,474	$ 823	$ 735	$ -	$ -	$ -	$ -	$ 15,086	$ 13,468	$ -	$ -	$ -	$ -	$ 548,619	$ 489,800
BH	Bunker Hill	-10.72%	$ 10,096	$ 9,014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,096	$ 9,014
PH	Phoenixville	-10.72%	$ 33,444	$ 29,859	$ 21,940	$ 19,588	$ 441	$ 394	$ -	$ -	$ -	$ -	$ 966	$ 862	$ 4,361	$ 4,361	$ -	$ -	$ 61,153	$ 55,064
Total Water Sales		-10.72%	$58,198,937	$51,959,274	$19,090,527	$17,043,780	$3,075,728	$2,745,971	$1,362,174	$1,216,132	$2,035	$1,817	$2,822,596	$2,519,978	$1,329,034	$1,329,034	$303,705	$303,705	$86,184,738	$77,119,693

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
RESIDENTIAL

Rate Zone	Division	Present Revenues	Proposed Increase		Proposed Revenues		% Increase	
			Aqua	OCA	Aqua	OCA	Aqua	OCA
RZ1	Main	$ 321,557,612	$ 55,340,357	$ 49,407,170	$ 376,897,969	$ 370,964,782	17.21%	15.36%
RZ1	CC Gardens,Sand Springs	$ 621,129	$ 278,591	$ 248,722	$ 899,720	$ 869,851	44.85%	40.04%
RZ1	Beech Mtn	$ 357,110	$ 132,948	$ 118,694	$ 490,057	$ 475,804	37.23%	33.24%
RZ1	Bristol	$ 220,255	$ 87,620	$ 78,226	$ 307,875	$ 298,481	39.78%	35.52%
RZ1	Mifflin	$ 270,441	$ 129,690	$ 115,785	$ 400,131	$ 386,227	47.95%	42.81%
RZ1	Mt. Jewett	$ 256,972	$ 60,364	$ 53,892	$ 317,335	$ 310,864	23.49%	20.97%
RZ1	Robin Hood Lakes	$ 115,248	$ 48,520	$ 43,318	$ 163,768	$ 158,566	42.10%	37.59%
RZ2	Main	$ 4,022,207	$ 708,358	$ 632,413	$ 4,730,565	$ 4,654,620	17.61%	15.72%
RZ2	Chalfont	$ 1,794,360	$ 472,317	$ 421,678	$ 2,266,677	$ 2,216,038	26.32%	23.50%
RZ2	Concord Park	$ 90,595	$ 35,090	$ 31,328	$ 125,685	$ 121,923	38.73%	34.58%
RZ2	Treasure Lake	$ 977,893	$ 359,607	$ 321,053	$ 1,337,500	$ 1,298,945	36.77%	32.83%
RZ3	All Divisions	$ 3,455,180	$ 501,936	$ 448,122	$ 3,957,116	$ 3,903,302	14.53%	12.97%
BH	Bunker Hill	$ 26,689	$ 10,096	$ 9,014	$ 36,785	$ 35,703	37.83%	33.77%
PH	Phoenixville	$ 88,607	$ 33,444	$ 29,859	$ 122,051	$ 118,466	37.74%	33.70%
Total Water Revenue		$ 333,854,297	$ 58,198,937	$ 51,959,274	$ 392,053,234	$ 385,813,571	17.43%	15.56%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
COMMERCIAL

Rate Zone	Division	Present Revenues	Proposed Increase		Proposed Revenues		% Increase	
			Aqua	OCA	Aqua	OCA	Aqua	OCA
RZ1	Main	$ 118,348,050	$ 18,704,400	$ 16,699,052	$ 137,052,451	$ 135,047,102	15.80%	14.11%
RZ1	CC Gardens,Sand Springs	$ 13,285	$ 5,311	$ 4,742	$ 18,596	$ 18,027	39.98%	35.69%
RZ1	Beech Mtn	$ 21,912	$ 8,637	$ 7,711	$ 30,549	$ 29,623	39.42%	35.19%
RZ1	Bristol	$ 332,552	$ 131,184	$ 117,119	$ 463,736	$ 449,671	39.45%	35.22%
RZ1	Mifflin	$ 61,855	$ 22,202	$ 19,822	$ 84,057	$ 81,677	35.89%	32.05%
RZ1	Mt. Jewett	$ -	$ -	$ -	$ -	$ -		
RZ1	Robin Hood Lakes	$ -	$ -	$ -	$ -	$ -		
RZ2	Main	$ 297,890	$ 80,323	$ 71,712	$ 378,213	$ 369,602	26.96%	24.07%
RZ2	Chalfont	$ -	$ -	$ -	$ -	$ -		
RZ2	Concord Park	$ 39,530	$ 22,525	$ 20,110	$ 62,055	$ 59,640	56.98%	50.87%
RZ2	Treasure Lake	$ 100,634	$ 63,229	$ 56,450	$ 163,862	$ 157,084	62.83%	56.09%
RZ3	All Divisions	$ 215,916	$ 30,774	$ 27,474	$ 246,689	$ 243,390	14.25%	12.72%
BH	Bunker Hill	$ -	$ -	$ -	$ -	$ -		
PH	Phoenixville	$ 59,703	$ 21,940	$ 19,588	$ 81,644	$ 79,291	36.75%	32.81%
Total Water Revenue		$ 119,491,326	$ 19,090,527	$ 17,043,780	$ 138,581,853	$ 136,535,106	15.98%	14.26%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
INDUSTRIAL

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Main	$ 16,593,945	$ 3,066,342	$ 2,737,592	$ 19,660,287	$ 19,331,536	18.48%	16.50%
RZ1	CC Gardens,Sand Springs	$ -	$ -	$ -	$ -	$ -		
RZ1	Beech Mtn	$ -	$ -	$ -	$ -	$ -		
RZ1	Bristol	$ -	$ -	$ -	$ -	$ -		
RZ1	Mifflin	$ -	$ -	$ -	$ -	$ -		
RZ1	Mt. Jewett	$ -	$ -	$ -	$ -	$ -		
RZ1	Robin Hood Lakes	$ -	$ -	$ -	$ -	$ -		
RZ2	Main	$ 29,568	$ 8,122	$ 7,251	$ 37,689	$ 36,818	27.47%	24.52%
RZ2	Chalfont	$ -	$ -	$ -	$ -	$ -		
RZ2	Concord Park	$ -	$ -	$ -	$ -	$ -		
RZ2	Treasure Lake	$ -	$ -	$ -	$ -	$ -		
RZ3	All Divisions	$ 5,392	$ 823	$ 735	$ 6,216	$ 6,127	15.27%	13.63%
BH	Bunker Hill	$ -	$ -	$ -	$ -	$ -		
PH	Phoenixville	$ 1,171	$ 441	$ 394	$ 1,612	$ 1,565	37.70%	33.66%
Total Water Revenue		$ 16,630,075	$ 3,075,728	$ 2,745,971	$ 19,705,804	$ 19,376,047	18.49%	16.51%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
PUBLIC

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Main	$ 8,481,333	$ 1,342,978	$ 1,198,994	$ 9,824,311	$ 9,680,326	15.83%	14.14%
RZ1	CC Gardens,Sand Springs	$ -	$ -	$ -	$ -	$ -		
RZ1	Beech Mtn	$ -	$ -	$ -	$ -	$ -		
RZ1	Bristol	$ -	$ -	$ -	$ -	$ -		
RZ1	Mifflin	$ -	$ -	$ -	$ -	$ -		
RZ1	Mt. Jewett	$ -	$ -	$ -	$ -	$ -		
RZ1	Robin Hood Lakes	$ -	$ -	$ -	$ -	$ -		
RZ2	Main	$ 31,553	$ 15,915	$ 14,208	$ 47,467	$ 45,761	50.44%	45.03%
RZ2	Chalfont	$ -	$ -	$ -	$ -	$ -		
RZ2	Concord Park	$ 3,779	$ 3,282	$ 2,930	$ 7,061	$ 6,709	86.84%	77.53%
RZ2	Treasure Lake	$ -	$ -	$ -	$ -	$ -		
RZ3	All Divisions	$ -	$ -	$ -	$ -	$ -		
BH	Bunker Hill	$ -	$ -	$ -	$ -	$ -		
PH	Phoenixville	$ -	$ -	$ -	$ -	$ -		
Total Water Revenue		$ 8,516,664	$ 1,362,174	$ 1,216,132	$ 9,878,839	$ 9,732,797	15.99%	14.28%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
RESALE

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Main	$ 12,812	$ 2,035	$ 1,817	$ 14,846	$ 14,628	15.88%	14.18%
RZ1	CC Gardens,Sand Springs	$ -	$ -	$ -	$ -	$ -		
RZ1	Beech Mtn	$ -	$ -	$ -	$ -	$ -		
RZ1	Bristol	$ -	$ -	$ -	$ -	$ -		
RZ1	Mifflin	$ -	$ -	$ -	$ -	$ -		
RZ1	Mt. Jewett	$ -	$ -	$ -	$ -	$ -		
RZ1	Robin Hood Lakes	$ -	$ -	$ -	$ -	$ -		
RZ2	Main	$ -	$ -	$ -	$ -	$ -		
RZ2	Chalfont	$ -	$ -	$ -	$ -	$ -		
RZ2	Concord Park	$ -	$ -	$ -	$ -	$ -		
RZ2	Treasure Lake	$ -	$ -	$ -	$ -	$ -		
RZ3	All Divisions	$ -	$ -	$ -	$ -	$ -		
BH	Bunker Hill	$ -	$ -	$ -	$ -	$ -		
PH	Phoenixville	$ -	$ -	$ -	$ -	$ -		
Total Water Revenue		$ 12,812	$ 2,035	$ 1,817	$ 14,846	$ 14,628	15.88%	14.18%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
PRIVATE FIRE

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Main	$ 15,234,043	$ 2,489,572	$ 2,222,658	$ 17,723,616	$ 17,456,702	16.34%	14.59%
RZ1	CC Gardens,Sand Springs	$ -	$ -	$ -	$ -	$ -		
RZ1	Beech Mtn	$ -	$ -	$ -	$ -	$ -		
RZ1	Bristol	$ 817,087	$ 298,035	$ 266,082	$ 1,115,122	$ 1,083,169	36.48%	32.56%
RZ1	Mifflin	$ -	$ -	$ -	$ -	$ -		
RZ1	Mt. Jewett	$ -	$ -	$ -	$ -	$ -		
RZ1	Robin Hood Lakes	$ -	$ -	$ -	$ -	$ -		
RZ2	Main	$ 49,219	$ 18,937	$ 16,907	$ 68,157	$ 66,126	38.47%	34.35%
RZ2	Chalfont	$ -	$ -	$ -	$ -	$ -		
RZ2	Concord Park	$ -	$ -	$ -	$ -	$ -		
RZ2	Treasure Lake	$ -	$ -	$ -	$ -	$ -		
RZ3	All Divisions	$ 49,996	$ 15,086	$ 13,468	$ 65,081	$ 63,464	30.17%	26.94%
BH	Bunker Hill	$ -	$ -	$ -	$ -	$ -		
PH	Phoenixville	$ 3,192	$ 966	$ 862	$ 4,158	$ 4,055	30.26%	27.01%
Total Water Revenue		$ 16,153,538	$ 2,822,596	$ 2,519,978	$ 18,976,134	$ 18,673,516	17.47%	15.60%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
PUBLIC FIRE

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Main	$ 6,346,105	$ 1,292,203	$ 1,292,203	$ 7,638,308	$ 7,638,308	20.36%	20.36%
RZ1	CC Gardens,Sand Springs	$ -	$ -	$ -	$ -	$ -		
RZ1	Beech Mtn	$ -	$ -	$ -	$ -	$ -		
RZ1	Bristol	$ 16,794	$ 6,760	$ 6,760	$ 23,555	$ 23,555	40.25%	40.25%
RZ1	Mifflin	$ 4,838	$ 1,949	$ 1,949	$ 6,788	$ 6,788	40.29%	40.29%
RZ1	Mt. Jewett	$ 4,177	$ 1,680	$ 1,680	$ 5,857	$ 5,857	40.23%	40.23%
RZ1	Robin Hood Lakes	$ -	$ -	$ -	$ -	$ -		
RZ2	Main	$ -	$ -	$ -	$ -	$ -		
RZ2	Chalfont	$ 54,754	$ 21,850	$ 21,850	$ 76,604	$ 76,604	39.91%	39.91%
RZ2	Concord Park	$ 581	$ 230	$ 230	$ 811	$ 811	39.63%	39.63%
RZ2	Treasure Lake	$ -	$ -	$ -	$ -	$ -		
RZ3	All Divisions	$ -	$ -	$ -	$ -	$ -		
BH	Bunker Hill	$ -	$ -	$ -	$ -	$ -		
PH	Phoenixville	$ 11,343	$ 4,361	$ 4,361	$ 15,704	$ 15,704	38.45%	38.45%
Total Water Revenue		$ 6,438,592	$ 1,329,034	$ 1,329,034	$ 7,767,627	$ 7,767,627	20.64%	20.64%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
CONTRACTS

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Main	$ 7,249,102	$ 303,705	$ 303,705	$ 7,552,807	$ 7,552,807	4.19%	4.19%
RZ1	CC Gardens,Sand Springs	$ -	$ -	$ -	$ -	$ -		
RZ1	Beech Mtn	$ -	$ -	$ -	$ -	$ -		
RZ1	Bristol	$ 13,893	$ -	$ -	$ 13,893	$ 13,893	0.00%	0.00%
RZ1	Mifflin	$ -	$ -	$ -	$ -	$ -		
RZ1	Mt. Jewett	$ -	$ -	$ -	$ -	$ -		
RZ1	Robin Hood Lakes	$ -	$ -	$ -	$ -	$ -		
RZ2	Main	$ -	$ -	$ -	$ -	$ -		
RZ2	Chalfont	$ -	$ -	$ -	$ -	$ -		
RZ2	Concord Park	$ -	$ -	$ -	$ -	$ -		
RZ2	Treasure Lake	$ -	$ -	$ -	$ -	$ -		
RZ3	All Divisions	$ -	$ -	$ -	$ -	$ -		
BH	Bunker Hill	$ -	$ -	$ -	$ -	$ -		
PH	Phoenixville	$ -	$ -	$ -	$ -	$ -		
Total Water Revenue		$ 7,262,995	$ 303,705	$ 303,705	$ 7,566,700	$ 7,566,700	4.18%	4.18%

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
AQUA & OCA PROPOSED REVENUES
TOTAL

Rate Zone	Division	Present Revenues	Proposed Increase Aqua	Proposed Increase OCA	Proposed Revenues Aqua	Proposed Revenues OCA	% Increase Aqua	% Increase OCA
RZ1	Main	$ 493,823,001	$ 82,541,593	$ 73,863,190	$ 576,364,594	$ 567,686,191	16.71%	14.96%
RZ1	CC Gardens,Sand Springs	$ 634,414	$ 283,902	$ 253,464	$ 918,316	$ 887,878	44.75%	39.95%
RZ1	Beech Mtn	$ 379,022	$ 141,585	$ 126,405	$ 520,607	$ 505,427	37.36%	33.35%
RZ1	Bristol	$ 1,400,580	$ 523,599	$ 468,188	$ 1,924,180	$ 1,868,768	37.38%	33.43%
RZ1	Mifflin	$ 337,134	$ 153,841	$ 137,556	$ 490,975	$ 474,691	45.63%	40.80%
RZ1	Mt. Jewett	$ 261,149	$ 62,044	$ 55,572	$ 323,193	$ 316,721	23.76%	21.28%
RZ1	Robin Hood Lakes	$ 115,248	$ 48,520	$ 43,318	$ 163,768	$ 158,566	42.10%	37.59%
RZ2	Main	$ 4,430,436	$ 831,655	$ 742,491	$ 5,262,091	$ 5,172,927	18.77%	16.76%
RZ2	Chalfont	$ 1,849,114	$ 494,167	$ 443,529	$ 2,343,281	$ 2,292,643	26.72%	23.99%
RZ2	Concord Park	$ 134,485	$ 61,128	$ 54,599	$ 195,613	$ 189,084	45.45%	40.60%
RZ2	Treasure Lake	$ 1,078,526	$ 422,836	$ 377,502	$ 1,501,362	$ 1,456,029	39.20%	35.00%
RZ3	All Divisions	$ 3,726,483	$ 548,619	$ 489,800	$ 4,275,102	$ 4,216,283	14.72%	13.14%
BH	Bunker Hill	$ 26,689	$ 10,096	$ 9,014	$ 36,785	$ 35,703	37.83%	33.77%
PH	Phoenixville	$ 164,016	$ 61,153	$ 55,064	$ 225,170	$ 219,081	37.28%	33.57%
Total Water Revenue		$ 508,360,299	$ 86,184,738	$ 77,119,693	$ 594,545,036	$ 585,479,991	16.95%	15.17%
Other Revenues - Wheeling Fee		$ 15,256	$ -	$ -	$ 15,256	$ 15,256	0.00%	0.00%
Other Operating Revenues		$ 1,303,137	$ -	$ -	$ 1,303,137	$ 1,303,137	0.00%	0.00%
Total Water Revenue		$ 509,678,692	$ 86,184,738	$ 77,119,693	$ 595,863,429	$ 586,798,384	16.91%	15.13%

AQUA PENNSYLVANIA, INC.
Aqua (Heppenstall) Functionalized "Customer" Cost

		Customer Facilities		Customer Accounting				
		Meters	Services	Billing and Coll	Meter Reading	Total Customer	Total Company	Pct. Cust.
	Transmission & Distribution Expenses							
	----Operation----							
601.5	Supervision & Engineering	$326,979	$31,075	$0	$0	$358,054	$551,956	64.87%
601.5	Maps & Records	$627,873	$59,671	$0	$0	$687,544	$1,059,881	64.87%
601.5	Removing and Resetting Meters	$3,538,363	$0	$0	$0	$3,538,363	$3,629,384	97.49%
601.5	Miscellaneous Meter Expense	$164,806	$0	$0	$0	$164,806	$169,045	97.49%
601.5	Services on Customer's Premises	$0	$351,810	$0	$0	$351,810	$366,397	96.02%
6502.2	Operating Labor	$32,096	$151,244	$0	$0	$183,340	$636,819	28.79%
620.5	Materials and Supplies	$700,614	$66,584	$0	$0	$767,198	$1,182,671	64.87%
636.5	Contractor Services - Other	$327,631	$31,137	$0	$0	$358,768	$553,058	64.87%
641.5	Property Rental	$19,710	$1,873	$0	$0	$21,583	$33,271	64.87%
650.5	Transportation	$574,446	$54,594	$0	$0	$629,040	$969,694	64.87%
675.5	Miscellaneous	$181	$17	$0	$0	$198	$305	64.92%
	----Maintenance----							
601.6	Supervision & Engineering	$7,833	$36,910	$0	$0	$44,743	$155,409	28.79%
601.6	Services	$0	$529,951	$0	$0	$529,951	$551,925	96.02%
601.6	Meters	$112,411	$0	$0	$0	$112,411	$115,303	97.49%
620.6	Materials and Supplies	$19,695	$92,810	$0	$0	$112,505	$390,778	28.79%
636.6	Contractor Services - Other	$210,789	$993,300	$0	$0	$1,204,089	$4,182,317	28.79%
675.6	Miscellaneous	$307	$1,445	$0	$0	$1,752	$6,086	28.79%
	Total Transmission and Distribution	$6,663,734	$2,402,421	$0	$0	$9,066,155	$14,554,299	62.29%
	Customer Accounting							
601.7	Labor	$0	$0	$533,777	$159,626	$693,403	$703,820	98.52%
620.7	Materials and Supplies	$0	$0	$171	$0	$171	$174	98.28%
636.7	Contractor Services - Billing	$0	$0	$6,273,366	$0	$6,273,366	$6,367,839	98.52%
636.7	Contractor Services - Meter Reading	$0	$0	$0	$2,733,105	$2,733,105	$2,773,240	98.55%
670.7	Bad Debt Expense	$0	$0	$2,865,864	$0	$2,865,864	$2,909,023	98.52%
	Total Customer Accounting	$0	$0	$9,673,178	$2,892,731	$12,565,909	$12,754,096	98.52%
	A&G - Employee Pensions & Benefits	$2,425,169	$512,594	$270,926	$80,944	$3,289,634	$17,954,696	18.32%
	A&G - Transportation Expense	$13,192	$4,753	$19,154	$5,727	$42,826	$83,970	51.00%
	A&G - Worker's Compensation	$146,997	$31,070	$16,422	$4,906	$199,395	$1,088,288	18.32%
	A&G - Advertising Expense	$46,447	$16,734	$67,438	$20,163	$150,782	$295,651	51.00%
	A&G - Rent - Building	$1,015	$366	$1,474	$441	$3,296	$6,463	51.00%
	A&G - Rent - Equipment	$5,223	$1,882	$7,583	$2,267	$16,955	$33,243	51.00%
	Total A&G	$2,638,043	$567,399	$382,996	$114,448	$3,702,887	$19,462,311	19.03%
	TOTAL O&M	$9,301,777	$2,969,820	$10,056,174	$3,007,179	$25,334,951	$46,770,706	54.17%

AQUA PENNSYLVANIA, INC.
Aqua (Heppenstall) Functionalized "Customer" Cost

Depreciation Expense							
Meters	$5,833,715				$5,833,715	$5,937,800	98.25%
Services		$8,084,646			$8,084,646	$8,419,866	96.02%
Office Buildings	$412,508	$148,618	$598,937	$179,077	$1,339,140	$2,625,765	51.00%
Office Furniture and Equipment	$2,506,348	$902,987	$3,639,069	$1,088,051	$8,136,455	$15,953,835	51.00%
Transportation Equipment	$447,811	$161,338	$650,196	$194,403	$1,453,748	$2,850,485	51.00%
Total Depreciation	$9,200,382	$9,297,589	$4,888,202	$1,461,531	$24,847,704	$35,787,751	69.43%
Taxes Other than Income							
Payroll Taxes	$427,320	$90,320	$47,738	$14,263	$579,640	$3,163,655	18.32%
PUC, OCA & OSBA Assessments	$374,974	$305,833	$196,083	$58,532	$935,422	$3,658,281	25.57%
Total Taxes Other Than Income	$802,294	$396,153	$243,821	$72,795	$1,515,062	$6,821,936	22.21%
Rate Base							
Meters	$70,575,829				$70,575,829	$71,917,639	98.13%
Services		$397,709,095			$397,709,095	$414,199,625	96.02%
Office Buildings	$10,253,670	$3,694,193	$14,887,728	$4,451,307	$33,286,898	$65,268,427	51.00%
Office Furniture and Equipment	$13,592,610	$4,688,382	$17,325,461	$5,183,058	$40,789,511	$94,798,778	43.03%
Transportation Equipment	$2,311,241	$795,248	$2,923,469	$874,611	$6,904,569	$16,196,502	42.63%
Materials and Supplies	$193,342	$751,886	$85,930	$26,086	$1,057,244	$7,672,303	13.78%
Cash Working Capital - Expenses	$224,895	$77,382	$284,468	$85,104	$671,849	$1,576,000	42.63%
Acquisition Adjustment	$149,158	$580,058	$66,292	$20,124	$815,632	$5,918,960	13.78%
Customer Advances	($9,891,381)	($38,466,482)	($4,396,169)	($1,334,551)	($54,088,583)	($392,515,121)	13.78%
Total Rate Base	$87,409,364	$369,829,762	$31,177,179	$9,305,739	$497,722,044	$285,033,113	174.62%
Return and Income Taxes @ 8.5%	$7,429,796	$31,435,530	$2,650,060	$790,988	$42,306,374	$323,335,476	13.08%
Other Revenue	($910,722)	($742,794)	($476,241)	($142,161)	($2,271,918)	($8,885,093)	25.57%
Total Direct Customer Costs	$25,823,527	$43,356,298	$17,362,016	$5,190,332	$91,732,173	$157,640,819	58.19%
Units	435,234	427,576	4,980,684	4,980,684			
Monthly Cost Per 5/8" Meter	$4.94	$8.45	$3.49	$1.04	$17.92		
Unrecovered Public Fire					$23,474,223	$23,474,223	100.00%
Units					435,234		
Monthly Unrecovered Public Fire					$4.49		
Total Cust. Costs & Public Fire per Month	$4.94	$8.45	$3.49	$1.04	$22.42		

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
OCA CUSTOMER COSTS @ AQUA PROPOSED 10.75% ROE

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities	Private Fire Protection	Public Fire Protection
DIRECT COSTS										
	O&M Expenses:									
	Removing and Resetting Meters	7	$3,629,384	$3,190,011	$304,516	$17,552	$26,146	$138	$91,021	$0
	Miscellaneous Meter Expense	7	$169,045	$148,580	$14,183	$818	$1,218	$6	$4,239	$0
	Services	8	$551,925	$488,009	$37,770	$1,590	$2,574	$7	$21,974	$0
	Meters	7	$115,303	$101,345	$9,674	$558	$831	$4	$2,892	$0
601.7	Cust. Accounting & Collections - Labor	11	$703,820	$652,796	$37,314	$1,291	$2,033	$4	$10,183	$200
636.7	Contractor Services - Billing	9	$6,367,839	$5,905,693	$337,566	$11,679	$18,397	$32	$92,124	$2,350
636.7	Contractor Services - Meter Reading	10	$2,773,240	$2,572,920	$147,068	$5,089	$8,015	$14	$40,134	$0
	TOTAL DIRECT O&M		$14,310,556	$13,059,354	$888,091	$38,575	$59,213	$205	$262,567	$2,550
	Depreciation:									
333	Services	8	$8,419,866	$7,444,803	$576,205	$24,258	$39,270	$109	$335,220	$0
334	Meters - Remote	7	$4,150,283	$3,647,850	$348,221	$20,071	$29,899	$158	$104,085	$0
	Meters - ERTS	7A	$1,787,517	$1,611,534	$153,837	$8,868	$13,208	$70	$0	$0
	TOTAL DIRECT DEPRECIATION		$14,357,666	$12,704,187	$1,078,264	$53,196	$82,377	$337	$439,305	$0
	Rate Base:									
333	Services - Net Plant	8	$414,199,625	$366,233,237	$28,345,337	$1,193,309	$1,931,827	$5,385	$16,490,530	$0
334	Meters - Remote - Net Plant	7	$53,503,337	$47,026,223	$4,489,090	$258,742	$385,438	$2,033	$1,341,810	$0
	Meters - ERTS - Net Plant	7A	$18,414,302	$16,601,396	$1,584,772	$91,353	$136,063	$718	$0	$0
	TOTAL DIRECT RATE BASE		$486,117,264	$429,860,856	$34,419,199	$1,543,404	$2,453,328	$8,136	$17,832,340	$0
	Required Return:									
	Interest		$8,954,280	$7,918,037	$634,002	$28,430	$45,190	$150	$328,472	$0
	Equity Return		$28,192,978	$24,930,318	$1,996,184	$89,512	$142,284	$472	$1,034,209	$0
	State & Federal Income Taxes		$11,455,188	$10,129,525	$811,077	$36,370	$57,812	$192	$420,213	$0
	TOTAL RETURN & INCOME TAXES		$48,602,446	$42,977,879	$3,441,263	$154,311	$245,286	$813	$1,782,894	$0
	Subtotal Direct Revenue Requirement		$77,270,668	$68,741,421	$5,407,618	$246,082	$386,876	$1,355	$2,484,766	$2,550
	PUC Assessments & Bad Debts	1.1480%	$887,067	$789,152	$62,079	$2,825	$4,441	$16	$28,525	$29
	Unrecovered Public Fire		$23,474,223	$21,164,007	$2,020,309	$116,456	$173,451	$0	$0	$0
	TOTAL DIRECT REVENUE REQUIREMENT		$78,157,735	$90,694,579	$7,490,006	$365,363	$564,769	$1,371	$2,513,291	$2,579
	5/8" METER EQUIVALENTS			392,385	37,457	2,159	3,216	17	11,196	
	CUST. COST BASED ON 5/8" METER			$19.26	$16.66	$14.10	$14.63	$6.72	$18.71	
INDIRECT CUSTOMER COSTS										
	O&M Expenses:									
604.8	A&G - Employee Health Plans		$2,513,876	$2,216,437	$176,111	$9,922	$12,250	$49	$93,483	$23,854
658.8	A&G Workers Compensation Insurance		$152,374	$134,345	$10,675	$601	$742	$3	$5,666	$1,446
676.21	A&G Labor Transferred		-$305,805	-$269,622	-$21,423	-$1,207	-$1,490	-$6	-$11,372	-$2,902
676.22	A&G Employee Benefits (Transferred)		-$1,023,503	-$902,403	-$71,702	-$4,040	-$4,987	-$20	-$38,060	-$9,712
404.8	A&G Employee Benefits (Transferred)		-$199,954	-$176,296	-$14,008	-$789	-$974	-$4	-$7,436	-$1,897
	Payroll Taxes		$395,465	$344,664	$30,019	$1,766	$2,058	$5	$14,177	$2,776
	TOTAL INDIRECT CUST. O&M		$1,532,453	$1,347,125	$109,672	$6,253	$7,598	$28	$56,458	$13,565
	Cust. Rev. Rqmt. Including Unrecovered Fire		$79,690,188	$92,041,704	$7,599,678	$371,617	$572,367	$1,399	$2,569,749	$16,144
	5/8" METER EQUIVALENTS			392,385	37,457	2,159	3,216	17	11,196	
	CUST. COST BASED ON 5/8" METER			$19.55	$16.91	$14.34	$14.83	$6.86	$19.13	

AQUA PENNSYLVANIA, INC.
WATER OPERATIONS
OCA CUSTOMER COSTS @ OCA PROPOSED 8.0% ROE

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities	Private Fire Protection	Public Fire Protection
DIRECT COSTS										
	O&M Expenses:									
	Removing and Resetting Meters	7	$3,629,384	$3,190,011	$304,516	$17,552	$26,146	$138	$91,021	$0
	Miscellaneous Meter Expense	7	$169,045	$148,580	$14,183	$818	$1,218	$6	$4,239	$0
	Services	8	$551,925	$488,009	$37,770	$1,590	$2,574	$7	$21,974	$0
	Meters	7	$115,303	$101,345	$9,674	$558	$831	$4	$2,892	$0
601.7	Cust. Accounting & Collections - Labor	11	$703,820	$652,796	$37,314	$1,291	$2,033	$4	$10,183	$200
636.7	Contractor Services - Billing	9	$6,367,839	$5,905,693	$337,566	$11,679	$18,397	$32	$92,124	$2,350
636.7	Contractor Services - Meter Reading	10	$2,773,240	$2,572,920	$147,068	$5,089	$8,015	$14	$40,134	$0
	TOTAL DIRECT O&M		$14,310,556	$13,059,354	$888,091	$38,575	$59,213	$205	$262,567	$2,550
	Depreciation:									
333	Services	8	$8,419,866	$7,444,803	$576,205	$24,258	$39,270	$109	$335,220	$0
334	Meters - Remote	7	$4,150,283	$3,647,850	$348,221	$20,071	$29,899	$158	$104,085	$0
	Meters - ERTS	7A	$1,787,517	$1,611,534	$153,837	$8,868	$13,208	$70	$0	$0
	TOTAL DIRECT DEPRECIATION		$14,357,666	$12,704,187	$1,078,264	$53,196	$82,377	$337	$439,305	$0
	Rate Base:									
333	Services - Net Plant	8	$414,199,625	$366,233,237	$28,345,337	$1,193,309	$1,931,827	$5,385	$16,490,530	$0
334	Meters - Remote - Net Plant	7	$53,503,337	$47,026,223	$4,489,090	$258,742	$385,438	$2,033	$1,341,810	$0
	Meters - ERTS - Net Plant	7A	$18,414,302	$16,601,396	$1,584,772	$91,353	$136,063	$718	$0	$0
	TOTAL DIRECT RATE BASE		$486,117,264	$429,860,856	$34,419,199	$1,543,404	$2,453,328	$8,136	$17,832,340	$0
	Required Return:									
	Interest		$9,722,345	$8,597,217	$688,384	$30,868	$49,067	$163	$356,647	$0
	Equity Return		$19,444,691	$17,194,434	$1,376,768	$61,736	$98,133	$325	$713,294	$0
	State & Federal Income Taxes		$7,900,640	$6,986,331	$559,399	$25,084	$39,873	$132	$289,821	$0
	TOTAL RETURN & INCOME TAXES		$37,067,676	$32,777,982	$2,624,551	$117,688	$187,072	$620	$1,359,761	$0
	Subtotal Direct Revenue Requirement		$65,735,898	$58,541,524	$4,590,906	$209,460	$328,663	$1,162	$2,061,633	$2,550
	PUC Assessments & Bad Debts	1.1480%	$754,648	$672,057	$52,704	$2,405	$3,773	$13	$23,668	$29
	Unrecovered Public Fire		$23,474,223	$21,164,007	$2,020,309	$116,456	$173,451	$0	$0	$0
	TOTAL DIRECT REVENUE REQUIREMENT		$66,490,546	$80,377,587	$6,663,919	$328,321	$505,887	$1,176	$2,085,301	$2,579
	5/8" METER EQUIVALENTS			392,385	37,457	2,159	3,216	17	11,196	
	CUST. COST BASED ON 5/8" METER			$17.07	$14.83	$12.67	$13.11	$5.76	$15.52	
INDIRECT CUSTOMER COSTS										
	O&M Expenses:									
604.8	A&G - Employee Health Plans		$2,513,876	$2,216,437	$176,111	$9,922	$12,250	$49	$93,483	$23,854
658.8	A&G Workers Compensation Insurance		$152,374	$134,345	$10,675	$601	$742	$3	$5,666	$1,446
676.21	A&G Labor Transferred		-$305,805	-$269,622	-$21,423	-$1,207	-$1,490	-$6	-$11,372	-$2,902
676.22	A&G Employee Benefits (Transferred)		-$1,023,503	-$902,403	-$71,702	-$4,040	-$4,987	-$20	-$38,060	-$9,712
404.8	A&G Employee Benefits (Transferred)		-$199,954	-$176,296	-$14,008	-$789	-$974	-$4	-$7,436	-$1,897
	Payroll Taxes		$395,465	$344,664	$30,019	$1,766	$2,058	$5	$14,177	$2,776
	TOTAL INDIRECT CUST. O&M		$1,532,453	$1,347,125	$109,672	$6,253	$7,598	$28	$56,458	$13,565
	Cust. Rev. Rqmt. Including Unrecovered Fire		$68,022,999	$81,724,712	$6,773,590	$334,574	$513,485	$1,204	$2,141,759	$16,144
	5/8" METER EQUIVALENTS			392,385	37,457	2,159	3,216	17	11,196	
	CUST. COST BASED ON 5/8" METER			$17.36	$15.07	$12.91	$13.31	$5.90	$15.94	

AQUA PENNSYLVANIA, INC.
Comparison of Metered & Unmetered Wastewater Rates

Current Rate Zone	Division	No. of Customers Metered	No. of Customers Unmetered	Usage	Average Use Per Metered Cust./Day	Current Rates: Current Metered Revenue	Current Rates: Average Monthly Metered Revenue Per Cust.	Current Rates: Current Unmetered Rate
RZ1	Bridlewood	1,362	1	44,364,900	89	$843,927	$52	$61
RZ1A	Treasure Lake	2,134	165	82,886,000	106	$1,316,049	$51	$56
RZ2	Emlenton	924	779	35,728,800	106	$688,582	$62	$68
RZ3	Beech Mtn	2,185	958	77,137,600	97	$1,861,993	$71	$80
RZ4	Honeycroft	544	1,949	28,952,000	146	$679,631	$104	$100
RZ5	Avon Grove	535	22	26,089,300	134	$725,189	$113	$177
RZ6	Masthope	1,371	3	30,102,200	60	$682,275	$41	$44
Limerick		5,091	507	252,700,400	136	$2,455,130	$40	$28
East Norriton	East Norriton	3,265	157	149,592,100	126	$1,482,883	$38	$39

Schedule GAW-9

Highly Confidential

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Glenn A. Watkins, 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).

DATED: November 10, 2021 Signature: _____
*319620 Glenn A. Watkins

Consultant Address: Technical Associates, Inc.
6377 Mattawan Trail
P.O. Box 1690
Mechanicsville, VA 23116

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3027385 (Water)
	:	C-2021-3028466 (Water)
v.	:	R-2021-3027386 (Wastewater)
	:	C-2021-3028467 (Wastewater)
Aqua Pennsylvania, Inc. and	:	
Aqua Pennsylvania Wastewater, Inc.	:	

DIRECT TESTIMONY

OF

ROGER D. COLTON

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

November 10, 2021

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Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations and public utilities on rate and customer service issues involving water/sewer, natural gas and electric utilities.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of the Office of Consumer Advocate.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A. I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of New York, Maryland, Pennsylvania, Tennessee, Kentucky, Ohio, Michigan, and Missouri. My clients include state agencies (e.g., Pennsylvania Office of Consumer Advocate, Maryland Office of People's Counsel, Illinois Office of Attorney General), federal agencies (e.g., the U.S. Department of Health and Human Services), community-based organizations (e.g., National Housing Trust, Natural Resources Defense Council, Sierra Club), and private utilities (e.g., Toledo Water, Entergy Services, Xcel Energy d/b/a Public Service of Colorado). In addition to state-specific and utility-specific work,

I engage in national work throughout the United States. For example, in 2020, I represented a coalition of major national consumer organizations to comment on the Environmental Protection Agency's proposed framework by which to judge community financial capability. In 2020, I worked with the Natural Resources Defense Council to develop a tool by which to assess the financial impact of differing types of low-income bill assistance. Last year, I completed a study of water affordability in twelve U.S. cities for the London-based newspaper, The Guardian. Currently, I continue to be of counsel to the National Coalition for Legislation on Affordable Water (NCLA-Water). A brief description of my professional background is provided in Appendix A.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. After receiving my undergraduate degree in 1975 (Iowa State University), I obtained further training in both law and economics. I received my law degree in 1981 (University of Florida). I received my Master's Degree (regulatory economics) from the MacGregor School in 1993.

Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY ISSUES?

A. Yes. I have published three books and more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications and other associated low-income utility issues. A summary of my publications is included in Appendix A.

Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR OTHER UTILITY COMMISSIONS?

A. Yes. I have testified before the Pennsylvania Public Utility Commission ("PUC" or "Commission") on numerous occasions regarding utility issues affecting low-income customers and customer service. I have also testified in regulatory proceedings in 42 states and various Canadian provinces on a wide range of utility issues. A list of the jurisdictions in which I have testified is listed in Appendix A.

Q. PLEASE EXPLAIN THE PURPOSE OF YOUR DIRECT TESTIMONY.

A. The purpose of my Direct Testimony is as follows.

- First, I examine the affordability of Aqua PA bills to the utility's low-income customers. This examination includes a discussion of the relationship between the lack of affordability and the presence of payment difficulties amongst Aqua PA's low-income customers.

- Second, I address the reasonableness of the low-income discount proposed by Aqua PA and recommend modifications.

- Third, I examine the reasonableness of the low-income arrearage forgiveness program proposed by Aqua PA and recommend modifications.

- Finally, I examine whether Aqua PA's performance on customer service and credit and collections metrics merit a finding that the utility engages in superior management to support a higher return on equity.

Summary of Recommendations

Q. PLEASE PROVIDE A SUMMARY OF THE RECOMMENDATIONS YOU MAKE IN YOUR DIRECT TESTIMONY.

A. Based on the data and analysis presented throughout my Direct Testimony, I recommend as follows:

- That Aqua PA propose a percentage of income program no later than its next rate case.

- That Aqua PA divide the first income block (now set at 0 - 100% of Poverty) for its water discount into two separate income blocks. The first income block should be set at 0 – 50% of Poverty, while the second income block should be set at 50 – 100% of Poverty.

- That Aqua PA modify its water discounts to add increased discounts for customers with income at the lower income blocks.

- That Aqua PA similarly modify its wastewater (sewer) discounts, to divide its first income block in two (moving from a single block of 0 – 100% of Poverty to having two separate blocks, the first at 0 – 50% of Poverty, with the second income block being 50 – 100% of Poverty).

- That Aqua PA add an increased discount for customers with income at the lower levels of Poverty.

- That the costs of the proposed Aqua PA discounts be recovered through base rates. I instead recommend that Aqua PA be allowed to recover only the net costs of the program rather than the gross costs of the program. Aqua PA should not be allowed to recover billings that it would not have collected even in the absence of the program.

- That resolution of the inter-class allocation of low-income programming costs be addressed in a future rate case.

- That Aqua PA be directed to develop a Community Education and Outreach Program (CEOP) that is directed toward areas within the Aqua PA service territory that have identified concentrations of low-income need. The CEOP should incorporate the following attributes: (1) the outreach should focus on

community-based outreach; (2) the outreach should be implemented primarily through "trusted messengers" that are part of the community toward which outreach is directed; (3) the outreach should be implemented through boots-on-the-ground grassroots strategies; and (4) the outreach should be focused on efforts to go to where the community is rather than making the community come to the utility. The strategy is to identify where the community lives, works, plays and prays and to be present at those locations rather than to sponsor "events" that community members must attend

- That Aqua PA adopt the following modifications to its arrearage forgiveness program.

  - Rather than granting bill credits of $25 toward pre-existing arrears for each timely payment made by a program participant, Aqua PA should increase its arrearage forgiveness credits so that program participants will reduce their pre-existing arrears to $0 over a three-year period.

  - Rather than pre-conditioning arrearage forgiveness credits on program participants making "timely" payments on their bills for current service, arrearage forgiveness credits should be granted for full payments as those payments are made, even if those payments have not been paid in a timely fashion.

  - Rather than requiring current arrearage forgiveness participants to separately apply for Aqua PA's bill discount program, the Aqua PA bill discount program and arrearage forgiveness should be completely integrated. Separate applications should not be required for the two programs. Participation in one program should automatically result in participation in the other.

Part 1. Low-income Unaffordability and Payment Difficulties for Aqua PA Customers.

Q. PLEASE PROVIDE AN OVERVIEW OF THIS SECTION OF YOUR TESTIMONY.

A. Aqua PA has a substantial affordability problem facing its low-income customers. According to the Company, the average low-income bill for the twelve months ending September 2021 was $966.47 ($80.54/month) for water service only, virtually identical to

the average low-income bill for the twelve months ending September 2020 of $955.04 ($79.59/month) for water service only. (OCA-II-22(a))[1] In assessing the affordability of these bills, I use a burden of 4.0% as my baseline of affordability for combined water and wastewater bills.[2]

My previous use of this burden as a demarcation of affordability was noted in the direct testimony of Aqua PA witness Rita Black. (Aqua PA St. 10, at 6 – 7). This burden was accepted by Aqua PA as a reasonable basis for providing "background information" for purposes of their program planning. (OCA-V-33). Since the average bill provided by Aqua PA is for water service standing alone, however, that 4% affordability threshold needs to be allocated to both water and wastewater. I allocate 1.5% to water service (thus leaving 2.5% for wastewater). In articulating this 4% metric, I note further that neither Aqua PA, nor myself, have proposed that Aqua PA adopt a percentage of income program, or a specific percentage of income water or wastewater burden, in this proceeding. Accordingly, while I will use this metric as the basis for much of my discussion below, the question of precisely what percentage of income burden may be the most appropriate measure by which to measure the affordability of water and/or wastewater service does not present itself in this proceeding as a question that need be resolved.

[1] The corresponding average bill for residential customers as a whole was $881.66 for the twelve months ending September 2021 ($73.47/month) and $854.36 for the twelve months ending September 2020 ($71.20/month). This indicates that the average bill reported by Aqua PA in this discovery request is for water-only, given its estimated typical average water bill of $69.35/month for most of its water divisions. (OCA-II-23).

[2] The OCA has not recommended, and the Pennsylvania PUC has not yet prescribed, a specific percentage of income by which to define an "affordable" water and/or wastewater bill.

Q. PLEASE EXPLAIN WHY YOU ADDRESS WATER AFFORDABILITY IN THIS RATE CASE.

A. It is important to address the affordability of Aqua PA's water service in this rate proceeding for the following reasons. As Aqua witness Rita Black testified, on January 24, 2020, the Commission approved the acquisition of the Peoples Companies by Essential Utilities, Inc., *f/k/a* Aqua America, Inc. As part of the settlement agreement approved by the Commission, a provision was included regarding Aqua PA's low-income customer assistance programming. As witness Black noted:

> Paragraph 108 of the *Aqua-Peoples Settlement* pertains to low-income programming for Aqua PA. It notes that, through the Helping Hand Collaborative process, Aqua PA was to consider development of a comprehensive universal service and conservation program. The items for evaluation included a customer assistance program, hardship fund, water conservation program, low-income service repair program and a comparable funding mechanism as utilized by energy utilities in the Commonwealth. Following this evaluation, Aqua PA would propose a recoverable universal service plan in its next base rate proceeding using input from the Helping Hand Collaborative and best practices from the Peoples Companies.

(Aqua PA St. 10, at 2 – 3) (internal notes omitted). This rate case is the "next base rate proceeding" referenced in that Settlement.

Even aside from the Settlement of the merger proceeding cited above, however, as I will discuss in detail below that the unaffordability of water service to Aqua PA's low-income customers has serious adverse impacts on the ability of Aqua PA's low-income customers to pay their water bills, and thus to the ability of Aqua PA to collect the dollars which the Company is billing. It is important from both perspectives to undertake actions that would improve Aqua PA's performance.

Q. WHY SHOULD AQUA PA BE CONCERNED ABOUT THE PAYMENT DIFFICULTIES PRESENTED BY UNAFFORDABLE BILLS RENDERED TO LOW-INCOME CUSTOMERS?

A. While Aqua PA and I disagree on many things about providing affordable water bills – throughout my testimony, references to "water" are intended to reference wastewater as well, unless explicitly noted to the contrary or unless the context clearly indicates otherwise—there is some basis for agreement. When asked whether Aqua PA agrees that low-income customers pay a smaller percentage of their bills than do residential customers as a whole, the Company responded that "this statement is absolute and does not consider that some low-income customers pay their full bill while other low-income customers do not. While household income and payment compliance are often interdependent, broad categorization such as this statement are not fully accurate." (OCA-V-17(a)). To this extent, we agree that some low-income customers pay their full bill while others do not, as well as that "household income and payment compliance are often interdependent."

Moreover, when asked whether Aqua PA agrees that low-income customers make less regular payments toward their bills than do residential customers as a whole, Aqua PA responded that "while payment trouble is more likely in low-income households generalizing payment patterns is not *fully* accurate." (OCA-V-17(b) (emphasis added). Aqua PA continued that "low-income households are more greatly impacted by

unexpected expenses such as a car or home repair needs (sic) or medical expenses which can increase the likelihood of being unable to make bill payments in a given month." (Id.)

Given agreement between myself and Aqua PA on observations such as the fact that household income and payment compliance are often interdependent; and that payment trouble is more likely in low-income households, there is a common basis for addressing the underlying unaffordability problems of Aqua PA's low-income customers.

Q. PLEASE EXPLAIN WHY YOU USE 4% AS THE METRIC BY WHICH TO ASSESS AQUA PA'S WATER/WASTEWATER BURDEN.

A. Even though the question of what is the correct burden by which to establish the affordability of water and wastewater burden does not present itself as an issue that needs to be resolved in this proceeding, I do employ a metric against which to measure the affordability impacts of Aqua PA's proposed discount. As Aqua PA witness Black observes, I have used 4% in other contexts. (Aqua PA St. 10, at 6) and will thus use the same metric here.

I have used that 4% burden in other contexts because it is substantially consistent with international standards applicable to combined water and wastewater burdens, which sets a combined water/wastewater affordable burden at 3% of income.[3] In contrast, the U.S. Environmental Protection Agency (EPA) uses an affordability metric of 4.5%. As Aqua PA acknowledges, however, the EPA metric is not intended to be applied at the

[3] See, United Nations Development Program, Beyond Scarcity: Power, Poverty and the Global Water Crisis, at 97 (3% affordable standard appropriate).

household level, but rather at the community level. (OCA-V-32). Moreover, the EPA's 4.5% is not a low-income standard, but is rather a standard to be applied at a community's median income. There is a generally accepted belief that the affordability of bills declines as incomes decline (this is one reason the Pennsylvania PUC has tiered burdens for natural gas and electric CAPs). For purposes of my review here, therefore, I do not use the 4.5% figure.

Using bills as a percentage of income as a measure of "affordability" is common throughout the United States. In the housing industry in particular, the U.S. Department of Housing and Urban Development (HUD) explains the housing burden:

> Housing programs in the United States have long measured housing affordability in terms of percentage of income. In the 1940s, the maximum affordable rent for federally subsidized housing was set at 20 percent of income, which rose to 25 percent of income in 1969 and 30 percent of income in 1981. Over time, the 30 percent threshold also became the standard for owner-occupied housing, and it remains the indicator of affordability for housing in the United States. Keeping housing costs below 30 percent of income is intended to ensure that households have enough money to pay for other nondiscretionary costs; therefore, policymakers consider households who spend more than 30 percent of income on housing costs to be housing cost burdened.[4]

Researchers for the U.S. Census Bureau have observed that "The conventional public policy indicator of housing affordability in the United States is the percent of income spent on housing. Housing expenditures that exceed 30 percent of household income have historically been viewed as an indicator of a housing affordability problem."[5] The

[4] HUD Office of Policy Development and Research. *Defining Housing Affordability*, available at https://www.huduser.gov/portal/pdredge/pdr-edge-featd-article-081417.html (last accessed June 24, 2021).
[5] Schwartz and Wilson (2008). *Who Can Afford to Live in a Home: A Look at Data from the 2006 American Community Survey*, U.S. Census Bureau: Washington D.C.

"shelter costs" included in this 30% burden includes rent/mortgage payments plus all utilities (excepting telephone). In other contexts, I have found that a water/wastewater burden, when combined with other utility costs, should result in total utility costs that would be a reasonable proportion of total affordable shelter burdens.

A. Assessing the Affordability of Aqua PA Bills.

Q. HOW DID YOU ASSESS THE AFFORDABILITY OF AQUA PA'S RATES?

A. I examined the affordability of Aqua PA's current rates as well as its proposed rates from three different perspectives. First, I examined the water burdens associated with Aqua PA's existing rates at six different income levels, ranging from $5,000 per year up to $20,000 per year. As Table 1 below shows, even at an annual income of $20,000, Aqua PA's *current* bills are more than three times higher than 1.5%. At an annual income of $10,000, Aqua PA's current bills are more than six times higher a 1.5% burden.

Aqua PA's proposed rate increase the resulting bill burdens. At Aqua PA's proposed rates, the average low-income bill for water service would be nearly 6% of income given an annual income of $20,000. At an annual income of $10,000, Aqua PA's proposed water rates would impose a burden of 11.3%.

Table 1. Aqua PA Water Burdens at Current Rates at Different Income Ranges

	Current Rates		Proposed Rates	
Annual Income	Average Low-Income Bill (OCA-II-22)	Bill Burden (Annual Bill / Annual Income	Average Low-Income Bill (OCA-II-23)[6]	Bill Burden (Annual Bill / Annual Income)
$5,000	$966.47	19.3%	$1,133.67	22.7%
$10,000	$966.47	9.7%	$1,133.67	11.3%
$12,500	$966.47	7.7%	$1,133.67	9.1%
$15,000	$966.47	6.4%	$1,133.67	7.6%
$17,500	$966.47	5.5%	$1,133.67	6.5%
$20,000	$966.47	4.8%	$1,133.67	5.7%

Q. DOES AQUA PA SERVE SUBSTANTIAL NUMBERS OF LOW-INCOME CUSTOMERS WHO MIGHT HAVE ANNUAL INCOMES AT THESE LEVELS?

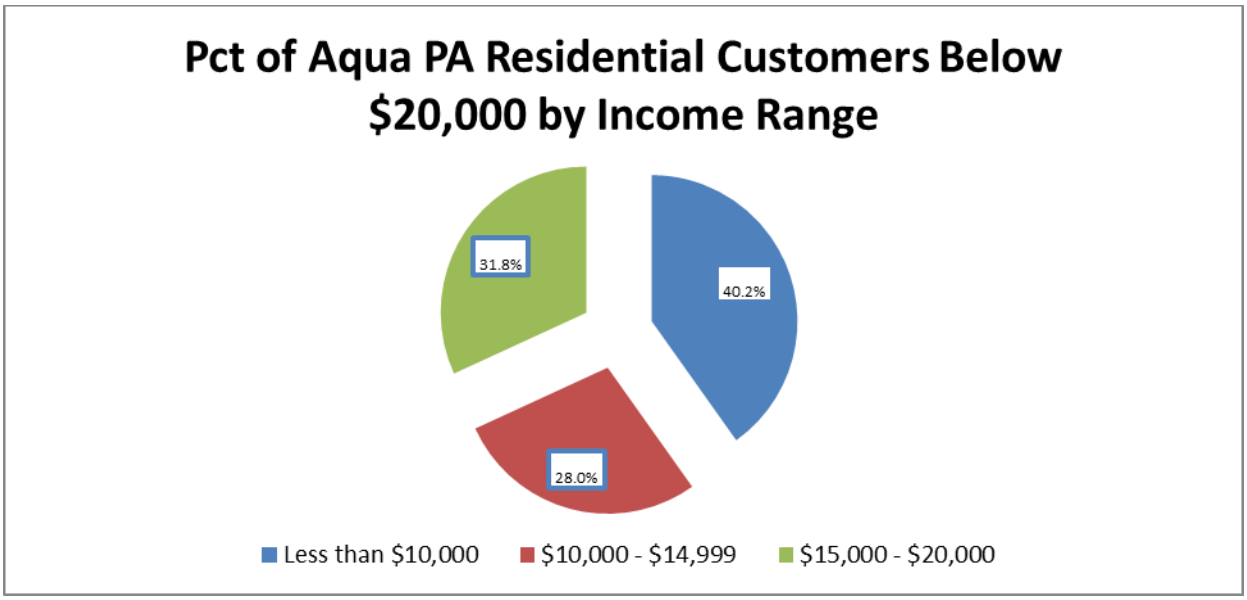
A. Yes. Aqua PA provided a list of the zip codes that comprise its service territory. (OCA-II-1). Aqua PA further provided the number of residential customers receiving water-only service.[7] According to the Aqua PA data, its water-only customer base is substantially larger than either its wastewater-only residential customer base (n=247) or its combined water/wastewater customer base (n=1,578). (OCA-II-3). I multiplied the number of customers in each zip code by the percentage of total households with differing annual incomes (ACS 5YR, Table B19001).[8] Using this methodology, I

[6] When asked for low-income bills at proposed rates, Aqua PA referenced its Filing Requirement OR3. That filing requirement indicated that typical residential water bills in most divisions would increase from $69.35/month to $81.32/month, an increase of 17.3%. Since Aqua PA said that it could not provide the same data for low-income specific bills (OCA-II-24), the average low-income bill was projected to increase at the same percentage ($966.47 x 1.173 = $1,133.67 ($94.47/month).

[7] It provided a separate list of those receiving wastewater–only along with a list of those receiving combined water and wastewater service. (OCA-II-3).

[8] This is the same methodology used by Aqua PA to estimate its number of low-income customers at different levels of poverty, with the exception that Aqua PA does the calculation on a county-wide basis rather than on a zip code basis. (OCA-II-48).

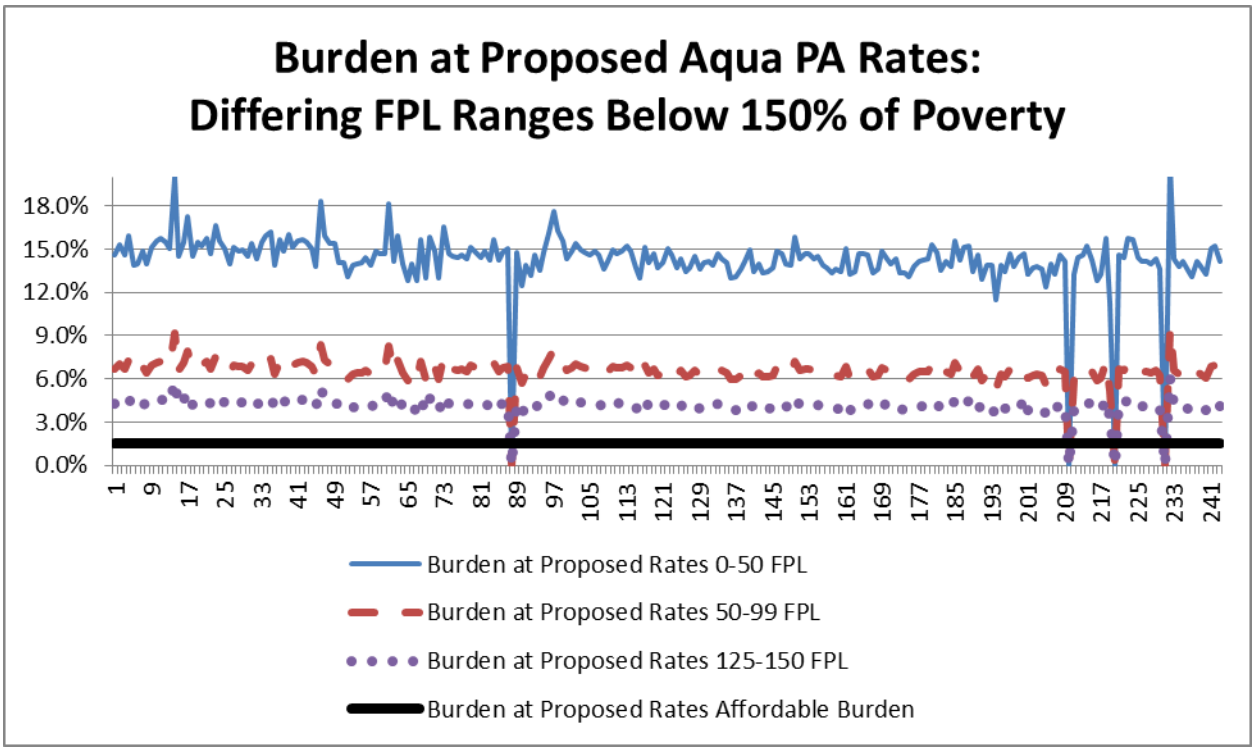
estimate that Aqua PA has 46,227 customers with income of less than $20,000. The Chart below demonstrates the distribution of that population. More than two-fifths of the Aqua PA customer base with an annual income of less than $20,000 in fact has an annual income of less than $10,000. The number of Aqua PA customers who will have a water bill burden of 11% to 23% of income or more is substantial.



Q. WHAT IS THE SECOND PERSPECTIVE YOU USED FROM WHICH TO ASSESS THE AFFORDABILITY OF AQUA PA'S EXISTING AND PROPOSED RATES?

A. The second perspective I used to assess the affordability of Aqua PA's existing and proposed rates uses Federal Poverty Level rather than absolute dollars of income as the measurement of low-income status. (In 2021, the average water bill provided by Aqua PA was calculated for the twelve months ending September 2021, so 2021 Poverty Levels are used). In the Chart below, I track the Aqua PA water burdens that would exist for each Zip Code at the utility's proposed rates. The 4% burden, which is represented by the heavy black line, is clearly below the burdens experienced in each zip code having

data.[9] The dramatic difference between an affordable water burden (heavy black line) and the water burden that would exist at Aqua Pa's proposed rates at annual income of 0 – 50% of Poverty (the solid line) is evident.

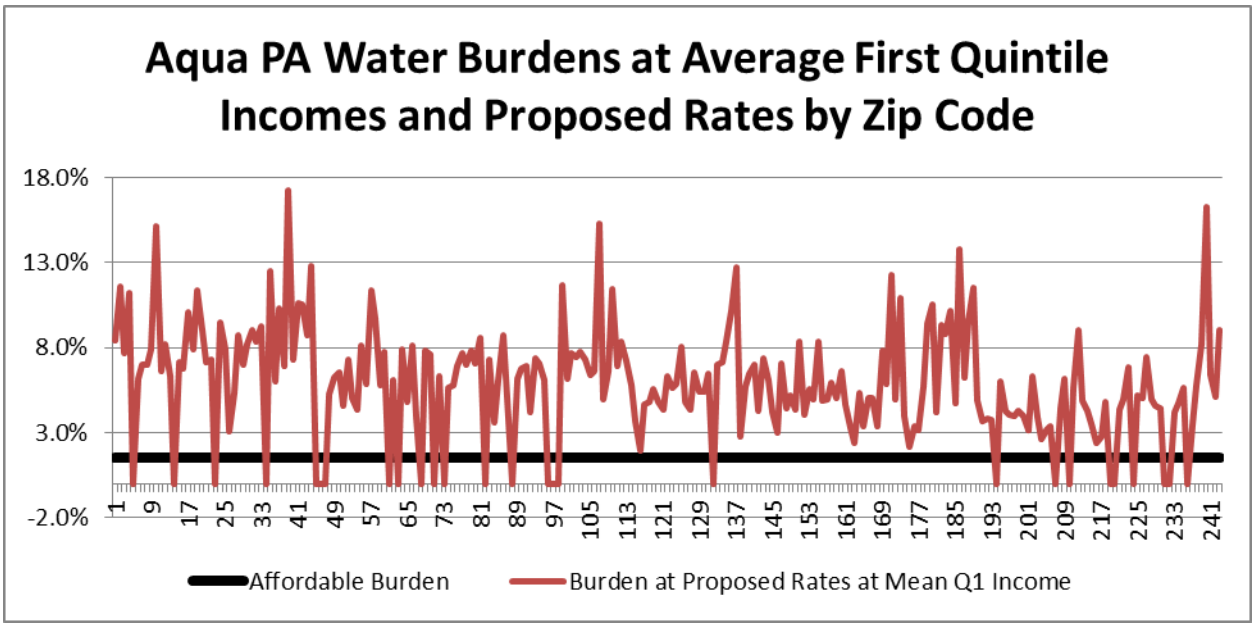


Q. WHAT IS THE THIRD PERSPECTIVE FROM WHICH YOU VIEWED AFFORDABILITY?

A. The third way I examined the affordability of Aqua PA rates was to consider the bill burdens (i.e., bills as a percentage of income) at the average income of the First Quintile of Income. The Census Bureau rank orders households from those with the lowest income to those with the highest income. That rank ordering is then divided into five equal parts, each part of which is called a "quintile." The "First Quintile" (also sometimes known as the "Lowest Quintile" or "Bottom Quintile") is that one-fifth of

[9] The occasional dip to "0" indicates a lack of data for that zip code, not a reduced Aqua PA water burden. For zip codes that have very low response rates, the Census Bureau withholds releasing any data in order to preserve privacy protections.

households with the lowest income. The Census Bureau reports the average income for each quintile (ACS 5YR, Table B19081). I thus consider the average income for the First Quintile for each zip code comprising the Aqua PA service territory. Even for the First Quintile of Income, Aqua PA water burdens are significantly above an affordable level. In making this observation, it is important to understand that simply because a household is in the First Quintile of Income for a particular zip code does not necessarily mean that that household is "low-income." In wealthy zip codes, the First Quintile of Income can be relatively high.



As can be seen in Table 2, at the First Quintile of Income, four of Aqua PA's zip codes would have water bill burdens (at proposed rates) of more than 15% of income. An additional five zip codes would have bill burdens of between 12% and 15% of income. The bulk of burdens would fall in the 85 zip codes with burdens between 6% and 9% of income (from four to six times higher than that which is affordable), while 90 have bill burdens of between 3% and 6% of income (from two to four times higher than that which is affordable).

Table 2. Water Bill Burdens at First Quintile of Income at Proposed Aqua PA Rates by Zip Code	
Aqua PA Burden at Average Q1 Income	Number of Zip Codes
>15%	4
12% - 15%	5
9%-12%	25
6%-9%	85
3%-6%	90
<3%	7
Total	216

Q. IS THERE A COST TO AQUA PA ARISING FROM LOW-INCOME INABILITY-TO-PAY?

A. Yes. Aqua PA agreed both (1) that much of the payment difficulty arising from a low-income inability-to-pay imposes costs on the Company, and (2) that those costs can be controlled by reducing the payment difficulties. When asked whether Aqua PA agrees that "reducing the dollar level of arrears to a customer will, all else equal, have the effect of reducing the working capital needed by a utility," Aqua PA's working capital witness William Packer responded:

> Specifically, regarding the rate making calculation of cash working capital, it depends on the manner of the calculation. The Company's calculation of average outstanding accounts receivable includes the balance of reserve for doubtful accounts, thus the timing differences caused by arrearages has been netted with actual accounts receivable and results in a lower calculation of average days outstanding, thus reducing the cash working capital for ratemaking purposes. Offsetting this side of the calculation is the calculation of the Company's bad debt expenses, which do include reserves for uncollectible accounts on a normalized (non-covid) (sic) basis. *In that regard, shortening customer arrearages undoubtedly reduces cost-of-serve either through cash working capital or the collection of bad debt expense to the extent reserves recoded for customer accounts are reduced.*

(OCA-V-18(a). (emphasis added). Mr. Packer agreed further that:

- Reducing the time (in days or months) that an arrearage remains outstanding will, all else equal, have the effect of reducing the capital needed by a utility (OCA-V-18(b));

- Working capital is a cost component that has equity return associated with it (OCA-V-19(c));

- To the extent that working capital has equity return associated with it, it will have a tax component associated with it (OCA-V-18(d));

- A higher dollar level of arrearages poses a greater risk of loss due to uncollectibles than a lower dollar level of arrearages (OCA-V-18(e));

- Reducing the number of customers who are off-system due to a disconnection of service will, all else equal, reduce lost sales to a utility (OCA-V-18(f)); and

- Reducing the number of customers receiving final bills with an unpaid balance will, all else equal, have the effect of reducing costs to a utility (OCA-V-18(g)).

Q. WHAT DO YOU CONCLUDE?

A. Addressing the unaffordability of Aqua PA's low-income bills is not simply a benefit provided to participating low-income customers. Increasing the affordability of bills (i.e., decreasing the unaffordability of bills) will generate positive financial benefits to the utility as well.

B. Assessing the Bill Payment Impacts of Aqua PA Low-Income Bill Unaffordability.

Q. IS THERE A COMMON BASIS FOR ASSESSING THE NONPAYMENT OF LOW-INCOME BILLS?

A. Yes. Aqua PA agreed that "a utility customer's 'success' in paying utility bills can be quantified and measured by using metrics measuring the completeness of payment, the

timeliness of payments, and the regularity of payments." (OCA-V-14). Given this agreement, there is a basis for moving forward with an examination of the bill payment impacts of unaffordability of Aqua PA service to low-income customers.

Q. HAVE YOU HAD OCCASION TO CONSIDER THE IMPACT OF THESE HIGH BILL BURDENS ON BILL PAYMENT PATTERNS?

A. Yes. Unaffordable bills to Aqua PA low-income customers have substantial adverse impacts on the ability of such low-income customers to pay their bills. Aqua PA provided selected credit and collection information for its water and wastewater residential customers (OCA-II-8), as well as for its identified low-income customers (OCA-II-9) for January 2019 through September 2021. (Average monthly data for this time period, however, will skew somewhat lower due to the lack of collection activity during the COVID-19 months of April 2020 through October 2020.) During that 31 month period:

- Low-income customers are more likely to be sufficiently far in arrears to be threatened with the disconnection of service. For every 100 residential bills Aqua PA rendered, it issued 3.5 disconnection notices. In contrast, for every 100 bills Aqua PA sent to identified low-income customers, it issued 19.8 disconnection notices.

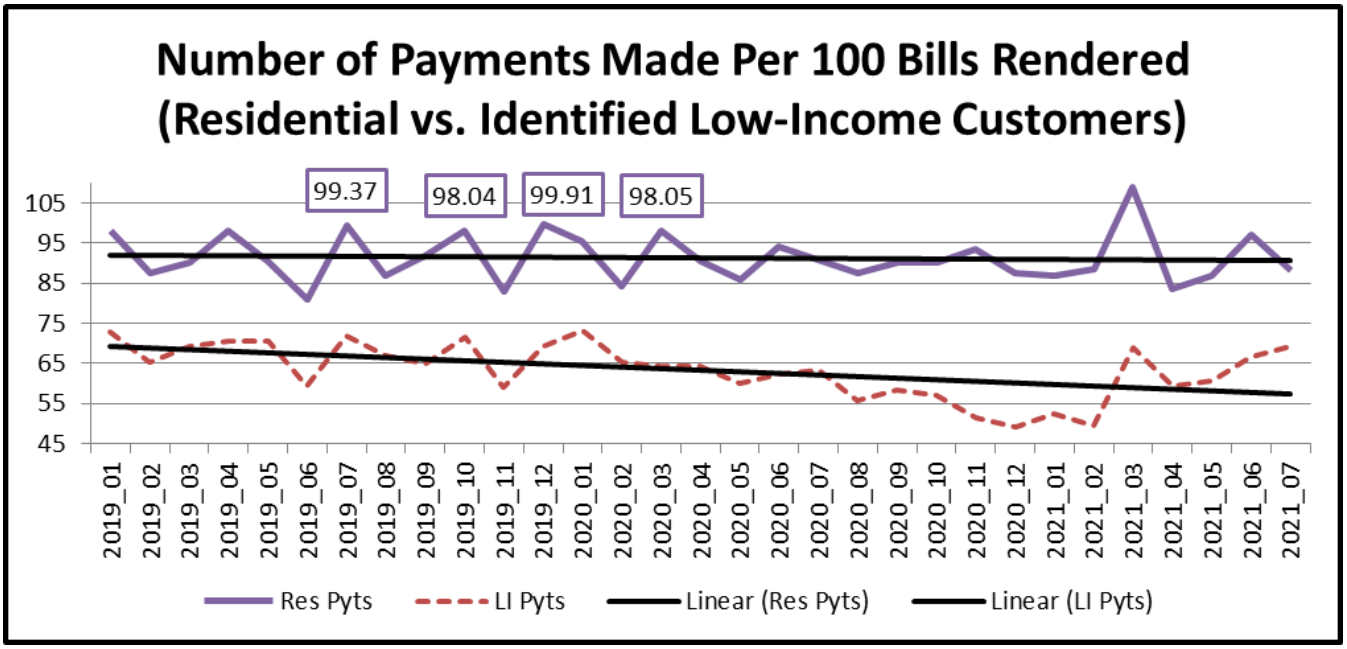
- Low-income customers receiving a disconnection notice were more likely to actually experience a disconnection. Aqua PA issued 28.3 disconnection notices for each residential nonpayment disconnection it actually performed. In contrast, Aqua PA issue only 22.0 disconnection notices for each nonpayment disconnection of an identified low-income account.

- For every 100 residential monthly bills Aqua rendered, it received 91.4 monthly payments. In contrast, for every 100 bills Aqua PA sent to identified low-income customers, it received 63.0 payments.

Table 3. Collection Activities Directed toward
Aqua PA's Residential and Identified Low-Income Customers

	Residential	Identified Low-Income
Disconnection notices per 100 bills issued	4.7	22.4
Disconnections notices per actual nonpayment disconnection	28.3	22.0
Payments received per 100 bills issued	91.4	63.0

The chart below shows a comparison of the number of payments made by residential customers, and by identified low-income customers, for each 100 bills rendered to such customers by month for the time period January 2019 through July 2021. Two important observations can be seen in this Chart. Even aside from the sharp difference in the number of payments made (per bills issued) between the two populations, it is evident, also, that the low-income performance is declining, while the residential performance as a whole is remaining relatively constant. Moreover, while it is evident that the identified low-income population never reaches even 75 payments for each 100 bills issued, the residential population reaches nearly 100 (or more) on numerous occasions.



Q. HAVE YOU HAD OCCASION TO EXAMINE THE PAYMENT PATTERNS OF LOW-INCOME CUSTOMERS RATHER THAN THE COLLECTION ACTIVITIES DIRECTED TOWARD SUCH CUSTOMERS?

A. Yes. Aqua PA provided data regarding the payment patterns of its residential customers as a whole (OCA-II-21), as well as its identified low-income customers (OCA-II-22).[10] That data shows the impact of low-income inability-to-pay attributable to unaffordable water bills. The data shows that:

- On average for January 2019 through September 2021 (OCA-II-21, OCA-II-22), Aqua PA's identified low-income customers are more than two times further in debt than residential customers in general ($595.12 vs. $252.57);
- For that same time period, that greater debt is not solely attributable to higher underlying bills. Aqua PA's identified low-income customers are also more

[10] Aqua PA does not indicate whether this data is for water-only or for combined water and wastewater customers.

than two times further behind in their monthly payments (7.8 Bills Behind vs. 3.7 Bills Behind);

- For that same time period, the percentage of identified low-income customers in arrears is nearly six times higher than the percentage of residential customers in arrears (71.9% / 12.3% = 5.84x);
- For that same time period, Aqua PA's identified low-income customers are further behind on their bills at the time of a service disconnection for nonpayment, both in dollar terms ($667.10 vs. $481.90) and in terms of Bills Behind (8.9 Bills Behind vs. 7.2 Bills Behind).

Table 4. Payment Patterns of Aqua PA (January 2019 through September 2021)
Residential and Identified Low-Income Customers (OCA-II-21, OCA-II-22)

	Residential	Identified Low-Income
Average arrears of accounts in arrears	$252.57	$595.11
Bills Behind of accounts in arrears[11]	3.7	7.8
Percent bills in arrears	12.3%	71.9%
Average arrears at the time of disconnection for nonpayment	$481.90	$667.10
Bills Behind at the time of disconnection for nonpayment	7.2	8.9

Q. HAVE YOU EXAMINED PAYMENT PATTERNS AND INDICATORS OF VULNERABILITY STATUS FROM ANY FINAL PERSPECTIVE?

A. Yes. I developed a set of six indicators of "vulnerability status" to be applied to each Aqua PA zip code. The six indicators included: (1) the percentage of population with

[11] "Bills Behind" is a payment pattern metric formulated by the Pennsylvania PUC's Bureau of Consumer Services. It is premised on the principle that it provides a better insight into customer payment patterns and the risk associated with nonpayment. For example, assuming two customers, Customer A who has an arrearage of $200 and Customer B who has an arrears of $150. The Bills Behind statistic asserts that Customer B is in greater payment trouble if he/she/they have an average bill of $50 (yielding 3 Bills Behind) while Customer A has an average bill of $80 (yielding 2.5 Bills Behind).

income less than 200% of Poverty Level is more than 25% higher than the percentage for the Aqua PA service territory as a whole; (2) the percentage of population with income less than 50% of Poverty Level is more than 25% higher than the percentage for the service territory as a whole; (3) the percentage of households receiving Supplemental Nutrition Assistance Program (SNAP, formerly known as Food Stamps) is more than 25% higher than the percentage for the service territory as a whole; (4) the percentage of population with income less than 100% of Poverty is higher than 15%; (5) the percentage of households with income less than $10,000 is more than 25% higher than the percentage for the service territory as a whole; and (6) the percentage of households with income less than $20,000 is more than 25% higher than the percentage for the service territory as a whole. I then determined how many zip codes had how many vulnerability indicators. That distribution of zip codes by the number of vulnerability indicators present in each zip code is set forth in the Table below.

Table 5. Number of Aqua PA Zip Codes by Number of Vulnerability Indicators

Number of Vulnerability Indicators	Number of Zip Codes
0	92
1	32
2	19
3	12
4	13
5	13
6	18
Total	199[12]

[12] Not all zip codes had published Census data on which to base a determination of all vulnerability indicators.

I then overlaid the percentage of bills paid as provided by Aqua PA for each of its zip codes. (OCA-II-10). I determined the percentage of bills paid by the number of vulnerability indicators present in each zip code. The results of that analysis are presented in Table 6 below. Zip codes with fewer vulnerability indicators (0 – 2) (pink-shaded cells) are clearly over-represented in the zip codes with higher payment percentages. For example, while 46% of all zip codes have 0 vulnerability indicators, from 58% to 71% of the zip codes making 90% to 99% of their payments have 0 vulnerability indicators. While 72% of all zip codes have from 0 to 2 vulnerability indicators, from 83% to 91% of zip codes making 90% to 99% of their payments have 0 to 2 vulnerability indicators.

The zip codes with fewer vulnerability indicators (0 – 2) (purple-shaded cells) are just as clearly under-represented in the zip codes with lower payment percentages. For example, while 46% of all zip codes have 0 vulnerability indicators, only 19% to 22% of zip codes making 85% of their payments (or less) have 0 indicators. While 62% of all zip codes have either 0 or 1 vulnerability indicators, only 15% to 38% of zip codes making 85% or less of their payments do so.

The corollary patterns can be seen with zip codes having a higher number of vulnerability indicators. While 9% of all zip codes exhibit all six vulnerability indicators, from 19% to 46% of zip codes making fewer than 85% of their payments (light orange-shaded cells) exhibit all six indicators. While 16% of all zip codes have either 5 or 6 vulnerability indicators, only 5% to 8% of zip codes making 90% or more of their payments exhibit

either 5 or 6 indicators. The picture that emerges is that those zip codes with concentrations of vulnerable households present greater payment difficulties for Aqua PA.

Table 6. Payments to Bills by Number of Vulnerability Status Markers

	Percent Payments Received to Bills Issued								
Number of Vulnerability Indicators	Below 50%	50-75%	75-80%	80-85%	85-90%	90-95%	95-99%	100%+	Grand Total
0	0%	22%	0%	19%	38%	71%	58%	38%	46%
0 -1	100%	33%	15%	38%	53%	86%	75%	63%	62%
0 – 2	100%	56%	15%	50%	68%	91%	83%	75%	72%
4 – 6	0%	44%	85%	35%	21%	6%	17%	25%	22%
5 – 6	0%	33%	77%	27%	8%	5%	8%	25%	16%
6	0%	22%	46%	19%	2%	4%	8%	0%	9%
Grand Total	1	9	13	26	53	77	12	8	199

Q. ARE THERE PAYMENT PATTERNS THAT YOU COULD NOT EXAMINE BY INCOME?

A. Yes. While Aqua PA tracks both the aging of arrears by dollars (OCA-II-12) and by numbers of accounts in arrears (OCA-II-13), it does not track the aging of arrears by income. (OCA-II-15; OCA-II-16). Moreover, while Aqua PA generated data distributing the size of residential arrears in ranges of $100 (OCA-II-14), it does not track this data for low-income customers. (OCA-II-17).[13] Neither does Aqua PA track deferred payment arrangements by low-income status. (Compare OCA-II-8(c) with OCA-II-9(c)). The fact that I do not discuss such payment patterns is attributable to a lack of Aqua PA data, not because they are unimportant.

[13] The narrative responses to OCA-II-12 through OCA-II-17 are not confidential. I do not address the content of any confidential attachments.

C. The Affordability Impacts of Aqua PA's Proposed Low-Income Bill Discount.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I assess the extent to which, if at all, Aqua PA's proposed low-income water bill discount achieves a water burden of 1.5% that I discussed in more detail above. I conclude that the discount falls well short of providing bills which achieve that burden for Aqua PA's low-income customers. The discount cannot reasonably be expected to generate improvements in low-income bill payment patterns that can and should be sought through an affordability program.

Q. HAS AQUA PA EXAMINED THE IMPACT OF ITS PROPOSED DISCOUNT ON THE AFFORDABILITY OF LOW-INCOME BILLS?

A. No. When asked for any written assessment of the extent to which the bill payment assistance proposed by Aqua PA would result in bill burdens to participating customers that would be affordable, Aqua PA said it had no such information. (OCA-V-1(b)). Aqua PA said that its objective was not to achieve an affordable bill, but rather merely to "improve affordability." "The assistance program provides discounts to current billings as well as credits for prior arrearages when timely payments are made, both of which are expected to improve affordability for low-income customers." (OCA-V-1(b)). When asked for any assessment of the extent to which the proposed Aqua PA discount is the factor that would make bills affordable or not, Aqua PA said it had undertaken no such assessment. Again, the Company said that it "sought, through the development of this

proposal, to increase affordability through a customer assistance program." (OCA-V-1(a)). It said further that "Aqua PA's customer assistance program design is intended to improve affordability." (OCA-V-1(c)).

Q. PLEASE EXPLAIN YOUR FINDINGS WITH RESPECT TO AQUA PA'S PROPOSED DISCOUNT.

A. Aqua PA's proposed water-only discount does not achieve a bill burden of 1.5% for the Company's lowest income customers. The Aqua PA rate discount results in bill burdens substantially above an affordable level for those lowest income customers and bill burdens that are nearly affordable to the higher income (low-income)[14] customers. At no income level do bills achieve the affordable percentage of income burden. Table 7 below sets forth the data. The bills, along with the bill impacts of the discounts proposed by Aqua PA, were provided by Aqua PA in response to discovery. (OCA-V-2).

As can be seen, and as I discussed in more detail above, bills at the rates proposed by Aqua PA in this proceeding are universally unaffordable to low-income customers. Table 7 sets forth the data. Aqua PA customers with income less than 50% of Poverty Level have a minimum water burden (without considering wastewater) of between 8% and 12% without a bill discount. Indeed, more than one-in-four (27%) of Aqua PA's zip codes have water burdens of 12% or more without a discount. Burdens improve, as one would expect them to do, as incomes increase, but at no point become affordable. At an

[14] I do not question whether all customers with income below 200% of Poverty are "low-income." This reference is simply to the fact that some customers live with incomes in the higher ranges of that definition of "low-income" (e.g., 150 – 185% FPL; 185 – 200% FPL) while other customers live with incomes in the lower ranges (0 – 50% FPL; 50 – 100% FPL).

annual income between 50% and 100% of Poverty Level, 194 zip codes have water burdens between 5% and 8% (from four to nearly six times higher than that which is affordable). At an annual income between 100% and 150% of Poverty, non-discounted Aqua PA bills result in water burdens from two to three times higher than that which is affordable (3% to 5%) in nearly all zip codes (234 of 239 for 100% to 125% of Poverty; 232 of 239 for 125% to 150% of Poverty). Undiscounted water bills come closest to being affordable for customers with income between 150% and 200% of Poverty. For customers with income between 185% and 200% of Poverty, undiscounted bills result in a burden of 1.5% to 3.0% of income, with somewhat fewer zip codes (n=191) with bills at those burdens for customers with income at 150% to 185% of Poverty.

Aqua PA's proposed low-income discounts improve the affordability of bills to low-income customers, but do not achieve an affordable burden, particularly for the lowest income tier of customers. For customers with income less than 50% of Poverty, water burdens in all zip codes remain at from two to nearly six times higher than (3% to 8%) than that which is affordable. For the remaining income levels, burdens in all zip codes range up to two times that which is affordable.

Table 7. Number of Zip Codes By Aqua PA Water Burden
at Proposed Rates and Proposed Discounted Low-Income Rates by Range of Poverty Level

	Number of Zip Codes					
Burden Without discount	0 – 50% FPL	50-99% FPL	100 – 124% FPL	125 – 149% FPL	150 – 184% FPL	185 – 199% FPL
Less than 1.5%	0	0	0	0	0	0
1.5% to less than 3%	0	0	0	7	191	235
3% to less than 5%	0	45	234	232	48	4
5% to less than 8%	0	194	5	0	0	0
8% to less than 12%	174	0	0	0	0	0
12% - 15%	63	0	0	0	0	0
15% or more	2	0	0	0	0	0
Burden with proposed Aqua discount	0 – 50% FPL	50-99% FPL	100 – 124% FPL	125 – 149% FPL	150 – 184% FPL	185 – 199% FPL
Less than 1.5%	0	0	0	2	0	4
1.5% to less than 3%	0	239	237	237	239	235
3% to less than 5%	226	0	2	0	0	0
5% to less than 8%	13	0	0	0	0	0
8% to less than 12%	0	0	0	0	0	0
12% - 15%	0	0	0	0	0	0
15% or more	0	0	0	0	0	0

Q. DO YOU HAVE CONCERNS ABOUT THE LEVEL OF AFFORDABILITY EXHIBITED IN THE DATA ABOVE?

A. Yes. I have a concern that the Aqua PA data presented above overstates the level of affordability facing the utility's low-income customers. The data presented by Aqua PA regarding the calculation of its proposed discounts assumes a hypothetical bill given a hypothetical average use of 4,000 gallons. This average use results in a monthly non-discounted water bill (at current rates) of $64.51 (an annual bill of $774.17). (OCA-V-2).

When asked for historical monthly water bills for Aqua PA's low-income customers, however, Aqua PA's data showed an average annual bill of $966.47 ($80.54/month) for the twelve months ending September 2021.[15] If instead of using Aqua PA's hypothetical monthly bill of $64.51, I use the actual average low-income water bill for current service, escalated for the rates proposed in this proceeding, the affordability impacts of Aqua PA's proposed discounts are as presented in Table 8 below. There is a serious deterioration in affordability given actual bills for current service as reported by Aqua PA. Bill burdens for the lowest income tier (0 – 50% of Poverty) are up to nine times higher than an affordable burden. Burdens for households with income between 50% and 125% of Poverty are up to nearly six times higher than that which is affordable. Only at the very high income range (185% to 200% of Poverty) do water burdens begin to approach an affordable level. Even then, they are as high as twice that which is defined as affordable.

[15] The reasonableness if this bill was confirmed by examining other 12-month periods. The average annual low-income bill for the twelve months ending September 2020 was $963.27 ($80.27/month), while the average annual low-income bill for the twelve months ending December 2020 was. $955.04 ($79.59/month).

Table 8. Number of Zip Codes By Aqua PA Water Burden
at Proposed Discounted Low-Income Rates by Range of Poverty Level Given Actual Low-Income Bills

	Number of Zip Codes					
Burden with proposed Aqua discount	0 – 50% FPL	50-99% FPL	100 – 124% FPL	125 – 149% FPL	150 – 184% FPL	185 – 199% FPL
Less than 1.5%	0	0	0	0	0	0
1.5% to less than 3%	0	1	2	157	178	235
3% to less than 5%	0	236	236	82	61	4
5% to less than 8%	48	2	1	0	0	0
8% to less than 12%	190	0	0	0	0	0
12% - 15%	1	0	0	0	0	0
15% or more	0	0	0	0	0	0

Q. WHAT DO YOU CONCLUDE?

A. Aqua PA concedes that it did not design its proposed low-income discounts with the objective of making bills affordable to the Company's low-income customers. And, indeed, when discounted bills are considered in light of incomes facing Aqua PA low-income customers, the proposed discounts do not result in affordable bills. I reach the following conclusions based on the discussion above. First, Aqua PA seriously underserves its lowest income customers (i.e., those with income below 50% of Poverty). Bills for these customers, even after applying the proposed Aqua PA discount, are from six to nine times higher than an affordable burden. Second, Aqua PA fails to adequately serve its customers with income between 50% and 125% of Poverty. Third, while bill burdens for customers at 125% to 185% of Poverty improve, they do not reach affordable levels.

D. Recommended Modifications to the Aqua PA Low-Income Discounts.

Q. PLEASE SUMMARIZE WHAT YOU RECOMMEND FOR THE AQUA PA LOW-INCOME DISCOUNTS.

A. Ultimately, Aqua PA should adopt a percentage of income program akin to the percentage of income program operated by its sister utility, Peoples Gas. Under this program, bills should explicitly be capped at an affordable percentage of income. By making bills affordable through such a program, low-income payment patterns will improve. In addition, as agreed to by Company witness William Packer, discussed in more detail above, improving affordability will not only have positive impacts for Aqua PA's low-income customers, it will have the impact of reducing specific costs to the utility ("shortening customer arrearages undoubtedly reduces cost-of-service either through cash working capital or the collection of bad debt expense to the extent reserves recoded for customer accounts are reduced.")

In saying that Aqua PA should "ultimately" adopt a percentage of income program, akin to its sister energy utility, I believe that adoption of such a program would possibly involve a series of policy decisions by the Commission (e.g., what water and wastewater burden should be deemed affordable) that may perhaps best be addressed in a statewide proceeding involving all water/wastewater utilities and related stakeholders or would involve additional analysis that would require more time and data than is available in this proceeding. I recommend that Aqua PA propose a percentage of income program no later than its next rate case.

Q. DO YOU HAVE RECOMMENDATIONS ABOUT THE PROPOSED STRUCTURE OF THE PROPOSED AQUA PA LOW-INCOME WATER DISCOUNT?

A. Yes. My ultimate recommendation is that the proposed Aqua PA low-income discount, as modified by my recommendations set forth below, should be approved. My recommendations are as follows:

- First, I recommend that Aqua PA divide the first income block (now set at 0 - 100% of Poverty) for its water discount into two separate income blocks. The first income block should be set at 0 – 50% of Poverty, while the second income block should be set at 50 – 100% of Poverty.

- Second, I recommend that Aqua PA modify its water discounts to add increased discounts for customers with income at the lower income blocks.

- Third, I recommend that Aqua PA similarly modify its wastewater (sewer) discounts, to divide its first income block in two (moving from a single block of 0 – 100% of Poverty to having two separate blocks, the first at 0 – 50% of Poverty, with the second income block being 50 – 100% of Poverty).

- I recommend that Aqua PA add an increased discount for customers with income at the lower levels of Poverty.

- Finally, I recommend that the costs of the proposed Aqua PA discounts be recovered through base rates.

Q. PLEASE EXPLAIN THE BASIS FOR YOUR FIRST RECOMMENDATION.

A. The data I discussed above clearly indicates that one income block covering income between 0% and 100% of Poverty is too wide. The affordability impacts of Aqua PA bills on customers that have income between 0% and 50% of Poverty are qualitatively different that the affordability impacts of Aqua PA bills on customers with income between 50% and 100% of Poverty. No other income block has zip codes with

undiscounted Aqua PA water burdens exceeding 8% of income, while the 0 – 50% income range has no zip codes with burdens that are less than 8% of income. Undiscounted water burdens (not including wastewater) substantially exceed 8% of income, with such burdens ascending to 12% or more in 65 (27%) of the zip codes. Even given Aqua PA's proposed discounts, water burdens for customers with annual income less than 50% of Poverty Level are from nearly six to eight times higher than the 1.5% burden I discuss above.

It makes little sense to have the income block where affordability needs are the deepest to be twice as large, and thus more poorly targeted, than either of the two income blocks (100 – 150% of Poverty; 150 – 200% of Poverty) at higher incomes. Aqua PA witness Rita Black reports that the Company estimates that it has 106,823 total customers with income below 200% of Poverty (Exh. RFB-1). Of those, nearly half (44.4%) fall in the income block of 0 - 100% of Poverty. (OCA-V-37). The numbers of customers with income below 100% of Poverty are roughly equally split between the two ranges 0 - 50% of Poverty (22,667) and 50 - 100% of Poverty (24,792).[16] For these reasons, the customers with income below 50% of Poverty should be included in a separate discount range.

Q. PLEASE EXPLAIN THE BASIS OF YOUR SECOND RECOMMENDATION.

A. My second recommendation is that Aqua PA should add an additional discount on the utility's second block of consumption for customers with income at or below 100% of the

[16] Aqua PA does not explain why the sum of its estimated number of customers at 0 – 50% of Poverty (22,667) and at 50 – 100% of Poverty (24,792) (OCA-V-37) is greater than its reported number of total customers at or below 100% of Poverty (43,327) (OCA-V-2).

Federal Poverty Level. I recommend that customers with annual income at 0 – 50% of Poverty receive a discount of 40% on the first 2000 gallons of usage in the second block of consumption. I recommend that customers with income at 50 – 100% of Poverty receive a discount of 20% on the first 2000 gallons of usage in the second block of consumption.

Finally, I recommend that customers with income between 100% and 150% of Poverty Level have a 65% discount on the first 2,000 gallons of consumption in the First Block rather than the 50% discount proposed by Aqua PA. I recommend no change to the discount for customers with income of between 150% and 200% of Poverty.

Q. PLEASE SHOW THE DISCOUNTS THAT YOU RECOMMEND BELOW COMPARED TO THE DISCOUNTS PROPOSED BY AQUA PA.

A. Table 9 below shows a side-by-side comparison of the discounts recommended by Aqua PA and the discounts which I propose. The primary differences in the two sets of recommendations are that: (1) the Aqua PA discounts are, by Aqua PA witness' own statements, not designed to achieve any type of affordability outcome, while the discounts I propose are; and (2) as a corollary to this first observation, the first income block proposed by Aqua PA (0 – 100% of Poverty) is too wide for the Company to provide a targeted discount designed to achieve a reasonable level of affordability. Accordingly, I divide that first income block in two and adjust the discounts accordingly.

Table 9. Aqua PA Proposed Water Discounts Compared to Colton Proposed Water Discounts			
Aqua PA Proposed Water Discounts		Colton Proposed Water Discounts	
0 – 100% Poverty	100% discount on fixed 100% discount on consumption of first 2K gallons	0 – 50% Poverty	100% discount on fixed 100% discount on consumption of first 2K gallons 40% discount on consumption of second 2K gallons
		50 – 100% Poverty	100% discount on fixed 100% discount on consumption of first 2K gallons 20% discount on consumption of second 2K gallons
100 – 150% Poverty	100% discount on fixed 50% discount on consumption of first 2k gallons	100 – 150% Poverty	100% discount on fixed 65% discount on consumption of first 2K gallons 0% discount on consumption of second 2K gallons
150 – 200% Poverty	100% discount on fixed 0% discount on consumption	150 – 200% Poverty	100% discount on fixed 0% discount on consumption

Q. PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU STATE THAT THE BASIS FOR YOUR RECOMMENDED MODIFICATIONS TO THE AQUA PA DISCOUNT LEVELS IS TIED TO ACHIEVING A LEVEL OF AFFORDABILITY.

A. Unlike Aqua PA's proposed discounts, I have established my discounts to achieve prescribed affordability impacts. Under my recommended modified discounts, customers with income below 50% of Poverty have a water burden falling between 2% and 3% in 226 of the 239 zip codes, while customers with income between 50% and 100% of Poverty have water burdens falling between 1.5% and 2.0% in 218 of the 239 zip codes.

At an income between 100% and 124% of Poverty, water burdens fall at less than 3% of income in 238 of the 239 zip codes, while at incomes of between 125% and 150% of Poverty, water burdens fall below 2% of income in 233 of the 239 zip codes.

While I recommended no change in the discounts for customers with income between 150% and 200% of Poverty, water burdens fall below 2% of income in 81 of the 239 zip codes, and between 2% and 3% of income in all 239 zip codes for customers with income between 150% and 184% of Poverty. Households with income at 185% to 200% of Poverty have water burdens of less than 2% of income in 233 of the 239 zip codes.

Table 10. Number of Zip Codes By Aqua PA Water Burden at Modified Discounted Low-Income Rates by Range of Poverty Level Given Actual Low-Income Bills

	Number of Zip Codes					
Burden with modified Aqua discount	0 – 50% FPL	50-99% FPL	100 – 124% FPL	125 – 149% FPL	150 – 184% FPL	185 – 199% FPL
Less than 1.5%	0	16	0	4	0	4
1.5% to less than 2%	0	218	64	229	81	229
2% to less than 3%	226	5	174	6	158	6
3% to less than 6%	13	0	1	0	0	0
6% to less than 8%	0	0	0	0	0	0
8% - 12%	0	0	0	0	0	0
12% or more	0	0	0	0	0	0

Q. HAVE YOU CALCULATED THE COST OF MODIFYING THE WATER DISCOUNTS?

A. Yes. My calculation of the cost of making the changes involves calculating the total cost of providing the modified discounts. From that figure, I subtract the cost of providing the discounts proposed by Aqua PA. Using Aqua PA's three alternative estimated

participation rates, the incremental costs, before taking into account the reductions in cost of service such as working capital (and associated equity return and tax savings), are as set forth in Table 11 below.

Table 11. Incremental Cost of Modified Discounts (before cost savings) at Alternative Participation Levels

	Alternative Participation Rates		
	10%	15%	25%
Modified discounts	$4,016,770	$6,025,125	$10,042,488
Aqua PA Proposed discounts	$3,246,587	$4,869,881	$8,116,469
Incremental cost of modified discounts	$770,183	$1,155,244	$1,926,619

As can be seen, the first year incremental costs of the modifications I propose are $770,000. Even by the time participation increases to 25% of the total eligible population, the total incremental cost of my modifications to the discounts proposed by Aqua PA is less than $2.0 million.

Q. PLEASE EXPLAIN YOUR PROPOSED MODIFICATIONS TO AQUA PA'S PROPOSED WASTEWATER LOW-INCOME DISCOUNTS.

A. For Aqua PA's wastewater discount, I again recommend splitting the first tier into two separate income ranges, one for customers with income at or below 50% of Poverty and the other for customers with income at 50 – 100% of Poverty. As Table 12 below demonstrates, however, unlike Aqua PA's proposed water discounts, with the exception of that lower income tier, the proposed wastewater discounts do a reasonably good job of achieving an affordable wastewater burden. If anything, the proposed Aqua PA low-income wastewater discounts generate bills that result in supra-affordable bill burdens for

customers with income above 125% of Poverty Level. The data shows that customers with income at or above 125% of Poverty experience burdens of less than 2% in most zip codes.

Table 12. Number of Zip Codes By Aqua PA Wastewater Burden at Aqua PA Proposed Discounted Low-Income Rates and Modified Proposed Discounted Rates by Range of Poverty Level

	Number of Zip Codes					
Burden at Aqua PA discount	0 – 50% FPL	50-99% FPL	100 – 124% FPL	125 – 149% FPL	150 – 184% FPL	185 – 199% FPL
Less than 2%	0	162	64	233	157	234
2% to less than 3%	0	77	174	6	82	5
3% to less than 4%	38	0	1	0	0	0
4% to less than 6%	200	0	0	0	0	0
6% to less than 8%	1	0	0	0	0	0
8% to less than 12%	0	0	0	0	0	0
12% or more	0	0	0	0	0	0
Burden with modified Aqua discount	0 – 50% FPL	50-99% FPL	100 – 124% FPL	125 – 149% FPL	150 – 184% FPL	185 – 199% FPL
Less than 2%	0	162	64	233	157	234
2% to less than 3%	233	77	174	6	82	5
3% to less than 4%	6	0	1	0	0	0
4% to less than 6%	0	0	0	0	0	0
6% to less than 8%	0	0	0	0	0	0
8% to less than 12%	0	0	0	0	0	0
12% or more	0	0	0	0	0	0

Based on this data, I recommend no change to Aqua PA's proposed discounts for wastewater customers with income above 100% of the Federal Poverty Level. Moreover, after splitting Aqua PA's first tier into two segments (0 – 50% of Poverty; 50 – 100% of Poverty), I recommend that Aqua PA's proposed discount remain as it proposes for

customers with income at 50 – 100% of Poverty. The Aqua PA discount proposals for those three income tiers are as follows:

- For customers with income with annual income at 50 – 100% of Poverty, a 75% discount on the fixed base facility charge, and a 100% discount on the first 2,000 gallons of consumption;
- For customers with annual income at 100% to 150% of Poverty, a 65% discount on the fixed base facility charge, and a 50% discount on the first 2,000 gallons of consumption; and
- For customers with annual income at 150% to 200% of Poverty, a 50% discount on the fixed base facility charge, and a 0% discount on consumption.

A side-by-side comparison of what Aqua PA proposes and what I recommend is set forth in Table 13 immediately below.

Table 13. Aqua PA Proposed Wastewater Discounts
Compared to Colton Proposed Wastewater Discounts

Aqua PA Proposed Wastewater Discounts		Colton Proposed Wastewater Discounts	
0 – 100% Poverty	75% discount on fixed 100% discount on consumption of first 2k gallons	0 – 50% Poverty	100% discount on fixed 100% discount on consumption of first 2K gallons
		50 – 100% Poverty	75% discount on fixed 100% discount on consumption of first 2K gallons
100 – 150% Poverty	65% discount on fixed 50% discount on consumption of first 2k gallons	100 – 150% Poverty	65% discount on fixed 50% discount on consumption of first 2k gallons
150 – 200% Poverty	50% discount on fixed 0% discount on consumption	150 – 200% Poverty	50% discount on fixed 0% discount on consumption

As can be seen, my only recommended change is to increase the discount on the Base Facility Customer Charge from 75% to 100% for customers with income at or below 50% of Poverty. With those two changes (splitting the first income tier in two; increasing the Base Facility Customer Charge for the lowest income range), otherwise, I recommend that the Aqua PA wastewater discounts be approved as proposed.

Q. HAVE YOU CALCULATED THE COST OF YOUR PROPOSED CHANGES TO THE AQUA PA WASTEWATER DISCOUNT?

A. Yes. I calculated the cost of the proposed wastewater changes in the same way I calculated the cost of my recommended water changes. I determined the cost that Aqua PA reports for its discounts as proposed. I then determined the cost of the discounts as I recommend they be modified. The difference is the incremental cost of my proposed modifications. Since I only make changes to the discounts Aqua proposed for the 0 – 100% of Poverty population, my calculation below is limited to that population.

Table 14. Incremental Costs of Modified Wastewater Discount			
Participation rate	10%	15%	25%
Participants	412	618	1030
Aqua PA (0 - 100% FPL)	$43.59	$43.59	$43.59
Participants	412	618	1,030
Total monthly cost	$17,959	$26,939	$44,898
Total annual cost	$215,508	$323,268	$538,776
Modified			
Participants	197	295	492
0 -50% FPL	$53.12	$53.12	$53.12
Sub-total cost	$10,465	$15,670	$26,135
50 - 100% FPL	$43.59	$43.59	$43.59
Participants	215	323	538
Sub-total cost	$9,372	$14,080	$23,451
Total monthly cost: modified	$19,836	$29,750	$49,586
Total annual cost: modified	$238,038	$357,000	$595,038
Incremental cost	$22,530	$33,732	$56,762

As Table 14 shows, the incremental costs of making my recommended modifications to the wastewater discount are minimal. At the Company's projected Year 1 participation rate, the system-wide cost is less than $23,000. Even as participation ramps up to 25%, as projected by Aqua PA, the total system-wide cost of making my recommended changes in the wastewater discount remains less than $57,000. The actual cost difference would be even less given the lost revenue adjustment I discuss in detail below.

Q. HOW DO YOU RECOMMEND THAT THE COSTS OF THE AQUA PA LOW-INCOME DISCOUNT BE RECOVERED IN RATES?

A. I have the following recommendations regarding rate recovery for the proposed Aqua PA bill discount program.

First, I recommend that Aqua PA be allowed to recover only the net costs of the program rather than the gross costs of the program. Aqua PA should not be allowed to recover billings that it would not have collected even in the absence of the program. When Aqua PA was asked to "provide, by year for the three most recent years available, all collectability studies assessing the rate at which the Company converts billings into collected revenue, whether for water or wastewater," it responded that it "does not have any studies." (OCA-II-45). Moreover, Aqua PA states that it has not studied the source of bad debt to the Company disaggregated by socio-economic status of the customer (for residential bad debt) (OCA-II-52); nor has it studied that disaggregated the source of arrears to the Company by socio-economic status of the customer (for residential arrears). (OCA-II-53). Aqua PA does state, however, that it has collections contracts which provide contingency fees of from 18% to 40% of the amount collected. (OCA-II-47). I recommend an offset in the middle of that range (28%). The costs of Aqua PA's bill discount program as identified above should be reduced by this lost revenue adjustment.

Second, I recommend that the Company's proposal to collect its low-income programming costs through a reconcilable rate rider be disapproved. Aqua PA is the first water/wastewater utility in Pennsylvania to propose a reconcilable rate rider for its low-income programming costs. It has provided no reason for such a rider to be approved for Aqua PA.

In contrast, according to Aqua PA witness Black, "Aqua PA proposes implementing a Universal Service Rider ("USR"), similar to the riders in place at the Peoples Companies and other energy utilities throughout the state, to recover the costs of programs from residential consumers." (Aqua PA St. 10, at 9). The riders in place at the Peoples Companies are not appropriate models upon which to base cost recovery for Aqua PA's low-income programs. In approving reconcilable riders for the Customer Assistance Programs (CAPs) for Pennsylvania's gas and electric utilities, the Commission relied upon specific statutory language applicable only to the energy utilities. The Commission explained:

> Requiring recovery of universal service costs through base rates cannot be reconciled with the statutory mandate of full cost recovery. As demonstrated below, requiring utilities to recover CAP costs through base rates would be returning to the cost recovery policy followed by the Commission prior to the General Assembly's requirement of full cost recovery.
>
> When an expense is recovered through base rates (as the great majority of utility expenses are) the utility does not have an assurance of "full recovery." The amount of an expense built into rates is based upon the level of expense incurred during the test year, with adjustments for any "known and measurable" changes occurring shortly after the test year. *See, Pa. PUC v. West Penn Power Co.*, Docket No. R-00942986, 1994 Pa. PUC Lexis 144 (Order entered December 29, 1994). Following the establishment of rates, if the actual level of an expense turns out to be higher than the amount built into rates, the utility is not entitled to recover this additional expense except in narrowly-prescribed circumstances.[17] This rule puts the utility at risk for increases in expenses between rate cases. Normally, that is considered to be beneficial as it gives the utility an incentive to manage those costs.

[17] Allowing recovery of expenses beyond those that were considered when base rates were set would normally be considered unlawful "retroactive ratemaking." However, case law establishes an exception to this rule for "extraordinary" expenses – those that are unanticipated, non-recurring, and substantial. *Popowsky v. Pa. PUC*, 642 A.2d 648 (Pa. Commw. 1994), *appeal denied*, 673 A.2d 338 (1996).

> Because a utility is not guaranteed that it will recover all of its prudently incurred costs, in establishing base rates it is said that "…a utility is allowed a reasonable opportunity to recover the costs incurred in providing service." Cawley and Kennard, *Rate Case Handbook*, p. 177 (1983) (Emphasis added).

(Pennsylvania PUC, Final Investigatory Order, at 13 - 14, Docket No. M-00051923, October 19, 2006). The Commission concluded that "the usual treatment of expenses in setting base rates is properly characterized as creating an "opportunity to recover", not as "complete" (or "full") recovery." The Commission said:

> With these ratemaking principles in mind as we proceed forward, the statutory requirements that the Commission allow "full recovery" of CAP costs cannot be effectuated by a policy of including these costs in base rates. Base rate treatment of universal service costs puts the utility at risk of not recovering the full amount of its prudently-incurred costs, which conflicts with the direction given by the General Assembly in the Competition Acts. In addition, the policy arguments for base rate recovery of most utility expenses provided by some of the commenting parties cannot override the policy decision of the General Assembly to require "full recovery" of universal service costs. Allowing recovery through a surcharge rather than a base rate will establish a charge which tracks the actual amount spent and allows customer rates to be adjusted on a regular basis to recover the actual costs. Accordingly, the Commission must allow recovery through a surcharge that is either reconciled or adjusted frequently to track changes in the level of CAP costs consistent with the direction given in the Competition Acts.

(Id, at 14 – 15). The ratemaking treatment of Aqua PA's low-income costs is not governed by the Competition Acts applicable to Pennsylvania's natural gas and electric utilities. The costs of Aqua PA's low-income programming are normal operating costs of the utility. The amount of that expense should be built into rates based upon the level of expense incurred during the test year, including the Fully Projected Future Test Year.

Aqua PA should not be guaranteed cost recovery for all low-income programming costs. Rather, as with any other Aqua PA expense, it is ensured, it is allowed a reasonable opportunity to recover the costs incurred in providing service. As the Commission noted with respect to the energy CAP cost recovery, this was "the cost recovery policy followed by the Commission prior to the General Assembly's requirement of full cost recovery" specifically for energy CAPs.

Whether costs should be subject to a reconcilable recovery through a rate rider is not based on the total costs to be recovered. Rather, it is based on the magnitude of the variability of the costs that fluctuate outside of the utility's control. That variability simply does not exist with the Aqua PA proposal. Whether the Aqua PA program ultimately is based on the discount levels proposed by the Company, or is ultimately based on the discounts I recommend herein, the discounts are a small portion of the total revenues experienced by the Company.

Moreover, as even Aqua PA notes in response to discovery, there will not be substantial cost fluctuation due to changes in bills. Unlike natural gas bills, which may vary widely, Aqua PA said, water bills will not. (OCA-V-29). The variability in costs, such as would be found in the energy CAPs, would also not be present in the Aqua PA program because, except for a small portion attributable to discounts on Tier 2 consumption for the lowest income, the vast bulk of discounts provided –whether using Aqua PA's proposed discounts or mine—are discounts applicable only to the base facility charge and to the first tier of consumption (i.e., the first 2,000 gallons of use). Program costs, in

other words, will not vary widely based on changes in total consumption as would occur with the energy CAPs (whether the discounts are applicable to the total bill).

In sum, Aqua PA has not provided a basis for the PUC to abandon its traditional ratemaking treatment of utility operating expenses. The reasons why the use of a reconcilable surcharge may be appropriate for energy universal service costs do not apply to low-income programming costs for water and wastewater utilities such as Aqua PA. Accordingly, Aqua PA's proposal to recover low-income programming costs through a reconcilable rider should be rejected. Aqua PA low-income programming costs should be included in base rates.

Q. PLEASE EXPLAIN YOUR RECOMMENDATION FOR THE ALLOCATION OF LOW-INCOME PROGRAM COSTS AMONGST CUSTOMER CLASSES.

A. Aqua PA witness Black recommends that Aqua PA's low-income programming costs be recovered exclusively from the residential customer class. (Aqua PA St. 10, at 9). She offers no policy or empirical justification for her recommendation.

Q. DO YOU AGREE WITH MS. BLACK'S RECOMMENDATION?

A. No. However, this does not seem to be an appropriate time and proceeding to resolve this issue. While increasing vaccination rates appear to be helping Pennsylvania to gain greater control of the public health crisis associated with the novel coronavirus pandemic (COVID-19), the economic crisis continues.[18] A discussion of the appropriate allocation

[18] The ongoing impacts of the pandemic on Pennsylvanians are addressed in the testimony of OCA witness Morgan DeAngelo.

of Aqua PA's universal service program costs should occur once Pennsylvania has moved past the economic hardships that are being imposed on all customer classes. Moreover, one reason the PUC has previously noted for allocating universal service charges over all customer classes involves the increasing burden which imposing those costs exclusively on the residential class has on residential ratepayers. Given that Aqua PA projects a participation rate of only 5% in Year One of its bill discount program, and only 15% in Year Two, it is clear that Aqua PA is not yet at the point where it can expect to experience any type of normal universal service expenditures. Accordingly, I take no position on Ms. Black's recommendation in this proceeding. I recommend that final resolution of the cost allocation issue be addressed in a future rate case. Further, I reserve the right to challenge any future recommendation that low-income programming costs be allocated exclusively to residential customers in a future rate case.

E. Improved Outreach for Bill Discounts.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I explain why Aqua PA needs to improve its targeting of areas with low-income households for enrolling customers in its low-income programs. In examining Aqua PA's program enrollment, I have considered two different factors of Aqua PA zip code: (1) whether the zip code has more than 20% of its population living at or below the Poverty Level ("Poverty" neighborhood); and (2) whether the percentage of households in a zip code with annual income of $20,000 or less is more than 25% higher than the percentage of households with that income in the service territory as a whole

(Concentrated <$20,000). For these areas of identified need, I determined the percentage of identified low-income customers who have been enrolled in Aqua PA's Helping Hands program as reported by Aqua PA. (OCA-II-3).

Table 15 shows that the percentage of identified low-income customers enrolled in the Helping Hands arrearage forgiveness program in zip codes with a concentration of households having income of $20,000 or less is not substantially different from the percentage enrolled when no concentration exists. While 3.6% of identified low-income customers are enrolled in areas of concentration, 3.3% of identified low-income customers are enrolled in areas with no such concentration.

Table 15. Percent Helping Hand Participants of Identified Low-Income by Whether Zip Code had Concentrated Population with Income Less than $20,000

	Sum of Identified Low-Income Customers	Sum of Helping Hand Participants	Avg Percentage of Confirmed LI Enrolled
Concentrated $20,000 Income	10,366	482	3.6%
Not Concentrated $20,000	9,294	340	3.3%
Grand Total	19,660	822	3.4%

The same conclusion is reached when zip codes are examined with respect to whether the zip code represents a Poverty Neighborhood as defined above (i.e., more than 20% of occupants have income Poverty below 100% of Poverty). The data is set forth in Table 16 below. While the 3.5% of customers identified by Aqua PA as being low-income, have been enrolled in the Helping Hands program when they live in Poverty neighborhoods, 2.9% of customers that have been identified as low-income have been enrolled in Helping Hands if they do not live in Poverty neighborhoods. If Aqua PA were targeting neighborhoods with concentrations of low-income customers for outreach

and enrollment, a higher concentration of Helping Hands participants would be present in neighborhoods that have higher concentrations of identified low-income customers.

Table 16. Pct Helping Hand Participants of Identified Low-Income by Whether Zip Code had Concentrated Population in Poverty Neighborhood

	Sum of Identified Low-Income Customers	Sum of Helping Hand Participants	Avg Percentage of Confirmed LI Enrolled
Poverty Neighborhood	7,081	334	3.5%
Not Poverty Neighborhood	12,579	488	2.9%
Grand Total	19,660	822	3.4%

Q. WHAT DO YOU RECOMMEND?

A. I recommend that Aqua PA be directed to develop a Community Education and Outreach Program (CEOP) that is directed toward areas within the Aqua PA service territory that have identified concentrations of low-income need. The CEOP should incorporate the following attributes: (1) the outreach should focus on community-based outreach; (2) the outreach is best implemented through "trusted messengers" that are part of the community toward which outreach is directed; (3) the outreach should be focused through boots-on-the-ground grassroots strategies. This boots-on-the-ground grassroots outreach out-performs outreach such as that provided through mass media, social media, utility-sponsored efforts, and top-down sponsored events; and (4) the outreach should be focused on efforts to go to where the community is rather than making the community come to the utility. The strategy is to identify where the community lives, works, plays and prays and to be present at those locations rather than to sponsor "events" that community members must attend. Each of these elements of an effective outreach strategy is missing from that outreach which Aqua PA currently pursues. Accordingly, Aqua PA should be directed to develop a CEOP; to identify the community partners with

which it proposes to work; to specifically identify the grassroots community organizations that will provide boots-on-the-ground efforts; and to identify those times and places where the Company proposes to meet the community where members of that community live, work, pray and play.

Part 2. Aqua PA's Arrearage Forgiveness Program.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I review the arrearage forgiveness program that has been proposed by Aqua PA. The 2018 Aqua PA rate case was resolved by a settlement which provided in relevant part that Aqua PA was to establish an arrearage forgiveness program. In this proceeding, Aqua PA is proposing to extend that arrearage forgiveness to its proposed pilot Universal Service Program. I recommend the following modifications to the Aqua PA arrearage forgiveness program.

- First, Aqua PA proposes to grant bill credits of $25 toward pre-existing arrears for each timely payment made by a program participant. This proposed level of bill credits results in an unreasonably long period over which low-income customers would earn sufficient credits to reduce their pre-existing credits to $0. Aqua PA should increase its arrearage forgiveness credits so that program participants will reduce their pre-existing arrears to $0 over a three-year period.
- Second, Aqua PA proposes to grant arrearage forgiveness credits only to the extent that program participants make "timely" payments on their bills for

current service. The Aqua PA arrearage forgiveness program should be modified such that arrearage forgiveness credits will be granted for full payments as those payments are made, even if those payments have not been paid in a timely fashion.

- Third, the Aqua PA arrearage forgiveness program, and the Aqua PA bill discount program, should be completely integrated. Separate applications should not be required for the two programs. Participation in one program should automatically result in participation in the other.

Q. PLEASE EXPLAIN THE BASIS FOR RECOMMENDING AN INCREASE IN THE MONTHLY CREDIT PROVIDED AS PART OF THE AQUA ARREARAGE FORGIVENESS PROGRAM.

A. Aqua PA's arrearage forgiveness program, to which the Company proposes no changes, provides for a bill credit toward pre-existing arrears (i.e., arrears at the time of program enrollment) of $25 per month for each timely payment made by a program participant. (Aqua PA St. 10, at 9). This level of bill credit results in an unreasonably long period over which a low-income customer would reduce their level of pre-existing arrears to a $0 balance.

As of August 2021, Aqua PA had 875 participants in its arrearage forgiveness program. (Confidential Response to OCA-V-28).[19] Of those participants:

[19] The OCA has confirmed with Aqua PA that the "confidential" nature of the response was limited to the customer-specific information contained therein, and not the data aggregated and discussed without reference to that personal information.

- 347 (40%) had a pre-existing arrearage greater than $1,200 (Confidential Response to OCA-V-28), which would take 48 months (or more) to retire at $25 per month, assuming that all payments in that four year period were made in a timely fashion;
- 277 (32%) had pre-existing arrearage greater than $1,500 (Id.), which would take 60 months (or more) to retire at $25 per month, assuming that all payments in that five year period were made in a timely fashion;
- 170 (19%) had a pre-existing arrearage greater than $2,100 (Id.), which would take 84 months (or more) to retire at $25 per month, assuming that all payments in that seven year period were made in a timely fashion.

The average pre-existing arrears for participants in the Aqua PA arrearage forgiveness program as of August 2021 was $1,393. (Id.). Given Aqua PA's proposed arrearage forgiveness credit of $25, therefore, it would take 56 months for program participants to reduce their pre-existing arrearages to $0, assuming they could make 56 timely payments in a row. The August 2021 average is not atypical. According to Aqua PA, as Table 17 below shows, its average arrears ranged from roughly $1,200 to more than $1,300 throughout 2021.

Table 17. Average Arrears of Helping Hand Participants (2021)
(Revised CAUSE-PA-I-27)

Month	Avg Helping Hand Arrears	Aqua PA Arrearage Forgiveness Monthly Credit	Months to Reduce Arrears to $0 (if all months have timely payments)
Jan-21	$1,177.78	$25	48
Feb-21	$1,212.91	$25	49
Mar-21	$1,248.55	$25	50
Apr-21	$1,254.71	$25	51
May-21	$1,415.81	$25	57
Jun-21	$1,404.57	$25	57
Jul-21	$1,337.26	$25	54
Aug-21[20]	$1,311.36	$25	53

Given the average Helping Hand arrears throughout 2021, as the Table above shows, program participants would need to make timely payments for between four years (48 months) and five years (60 months) in order to reduce their pre-existing arrears to $0 *on average*.

These high arrearages are not only common in the existing arrearage-forgiveness program, but they are common in the low-income population as a whole. Table 18 below, for example, shows the number of low-income involuntary disconnections for nonpayment for the most recent five months of data available (May through September 2021). (OCA-II-22). In each month, the average arrearage was $1,000 or more. Over the five month period, Aqua PA disconnected service to nearly 1,571 low-income customers. The arrearage forgiveness program would not offer a realistic alternative to these low-income customers in arrears.

[20] The August 2021 average arrears for this table was provided in a separate discovery response than the August 2021 arrears previously cited ($1,393). No explanation of the difference, albeit a relatively small difference, was provided by Aqua PA.

Table 18. Number of Low-Income Nonpayment Disconnections and Average Arrears at Time of Disconnection (May – September 2021) (OCA-II-22)

	May 2021	June 2021	July 2021	August 2021	September 2021
Low-income disconnections	327	314	220	439	271
Avg arrears at disconnection	$1,170.23	$1,039.43	$956.07	$1,020.88	$1,075.59

Q. PLEASE EXPLAIN THE BASIS FOR REQUIRING CUSTOMERS TO MAKE FULL PAYMENTS RATHER THAN TIMELY PAYMENTS IN ORDER TO EARN ARREARAGE FORGIVENESS.

A. The structure of the Aqua PA arrearage forgiveness programs fails to take into account the potential instability of income amongst the working poor as one aspect of ability to pay. Income for the working poor, in particular, can be erratic and unpredictable. A working poor customer may not *know* in April what his or her income is going to be in July or August, let alone in the following December or January. Periods of unstable wages may make payments that were reasonable in April unreasonable at a later date.

Working poor families tend to find themselves in lower quality hourly wage jobs, often marked by considerable income fluctuations due to the number of hours they are called upon to work. The types of occupations which characterize the working poor can be identified. Even aside from the level of wages, the presence of hourly wages and unpredictable hours mark occupations that are the province of the working poor. Three times as many working poor families (as compared to non-poor families) are in service occupations and laborer occupations, while nearly twice as many working poor

(compared to non-poor) families have workers who are in operator/transportation occupations.

Persons working in these occupations often face periods of lost wages. The U.S. Department of Labor refers to periods of lost wages caused by a reduction in hours as "involuntary part time employment." Involuntary part time workers are persons who in at least one week of the year worked fewer than 35 hours because they could not find full-time work. A full 60% of these workers face cutbacks in hours due to slack work or business conditions. Given the nature of the work, for Aqua PA to simply *assume* that the income of a working poor household at any given point in time will continue unabated over a five year period to support consistent timely payments is to ignore one major attribute of the working poor's ability to pay.

A second factor contributing to the instability of income of the working poor involves the paid leave benefits provided. The absence of paid vacation and sick leave can directly affect the ability of a household to maintain Aqua PA's arrearage forgiveness payments over time. Low-income workers often have few or no workforce benefits, like paid leave or flexible schedules that are essential if workers are to meet the needs of their family members. Paid leave would make it economically possible for workers to spend time away from work in order to address their family's needs. Flexibility would allow workers to meet with teachers, care for sick or disabled family members, and deal with emergencies without having to miss work or go without wages. Without flexibility in

their work schedules or access to paid leave, workers have no choice but to take unpaid leave when family or medical emergencies occur.

Families in the bottom quartile of income are significantly less likely to have access to paid sick leave, paid vacation leave, or flexible work schedules than families with higher incomes. More than three fourths of workers in the bottom quartile of family income lack regular sick leave; more than half do not have consistent vacation leave. Families in the bottom income quartile are more likely than other workers to lack *both* sick leave *and* vacation leave.

The lack of paid leave time may directly affect the ability of a working poor customer to make timely payments on Aqua PA's arrearage forgiveness plan over a five year period. A person working 35 hours a week on hourly wages may lose three days of work simply due to a sick child missing school and requiring care. If no leave time exists for that employee, the sick child translates into permanently lost wages. Personal illness, too, results in permanently lost wages, whether illness keeps a worker away from his or her job for a day, for two days, or for a week.

Q. PLEASE EXPLAIN THE SYNERGISTIC ADVERSE IMPACTS ON LOW-INCOME CUSTOMERS FROM THE COMBINATION OF PROVIDING UNREASONABLY LOW MONTHLY CREDITS WITH THE UNREASONABLE PRECONDITION OF MAKING TIMELY PAYMENTS.

A. The structure of the Aqua PA arrearage forgiveness program systematically denied an opportunity to low-income customers to reduce the balance of their pre-existing arrears to

$0. Achieving sufficient credits to reduce their pre-existing arrears to $0 is the purpose of the program. Before I discuss what we know about the impacts of the Aqua PA program, let me note what Aqua PA does *not* know:

- Aqua PA does not track the number of months in which program participants earn arrearage forgiveness credits. (Confidential OCA-V-28(c)).
- Aqua PA does not track the number of program participants who have successfully reduced their pre-existing arrearage balance to $0. (Confidential OCA-V-28(d)).
- For customers who exit the arrearage forgiveness program, Aqua PA does not track the dollars of forgiveness earned prior to the exit. (Confidential OCA-V-28(l)).
- For customers who exit the arrearage forgiveness program, Aqua PA does not track the dollars of bills received prior to the exit (Confidential OCA-V-28(m)), or the dollars payments made by the customer prior to the exit. (Confidential OCA-V-28(n)).

Q. HOW HAS THE ARREARAGE FORGIVENESS PROGRAM PERFORMED?

A. When asked for a list of participants who have enrolled in the Aqua PA arrearage forgiveness program, along with specific data about those participants, Aqua PA could provide both the date that a customer enrolled in the program and the date that a customer exited the program. (Confidential OCA-V-28(a) and Confidential OCA-V-28(j)). Through this data, it is possible to determine how long a customer was on the arrearage forgiveness program before exiting the program. The data in Schedule RDC-1 and

Schedule RDC-2 examines the performance of the arrearage forgiveness program from two perspectives.[21]

Schedule RDC-1 presents data on the number of months that a low-income customer participated in the arrearage forgiveness program before exiting the program. The columns in the Schedule present the number of months before the customer exited the program. The rows in the Schedule present the month of program enrollment. As can be seen in the "Total" figures, of the 1,884 low-income customers who enrolled in Aqua PA's arrearage forgiveness program, only 646 (34%) remained participants as of October 2021. Nearly two-of-three of program enrollees, in other words, failed to remain in the program. Of the 1,490 low-income customers who enrolled in 2020, only 445 remained in the program as of October 2021. Of the 683 who enrolled in the program in the first six months of 2020, only 168 (25%) remain in the program as of October 2021.

Schedule RDC-2 extends the understanding of what is happening with low-income customers who enroll in the Aqua PA arrearage forgiveness program. The rows in this Schedule present the number of months from the date of enrollment to the present (October 2021). The columns presents the number of months from the date a low-income customer enrolled in the arrearage forgiveness program to the date a low-income customer exited the arrearage forgiveness program. For example, Schedule RDC-2 shows that, as of October 1, 2021:

- None of the 30 customers who had enrolled 20 or 21 months prior to October 2021 remained in the program as of October.

[21] The data in Schedule RDC-1 and RDC-2 is based on Confidential OCA-V-28(j). See footnote 19.

- Of the 191 customers who enrolled 19 months prior to October 2021, only 46 (24%) remained (145 had exited the program). Of the 145 who exited the program, 74 had exited the program in the first twelve months of participation.
- Of the 264 customers who enrolled in the program 15 months prior to October 2021, only 66 (25%) remained in the program (198 had exited the program). Of those 198 who exited the program, 102 had exited the program in the first ten months of participation.[22]

Aqua PA states that it does not track the dollars of credits provided to a low-income customer before those customers exit the arrearage forgiveness program. Based on the data in Schedule RDC-1 and Schedule RDC-2, however, we know that, even assuming that 100% of participants made a "timely" payment during the months they participated in the program before they exited the program:

- 106 participants would have earned a total of only $25 in credits (1 month before exiting);
- 93 participants would have earned a total of only $50 in credits (2 months before exiting);
- 81 participants would have earned a total of only $100 in credits (4 months before exiting);
- 59 participants would have earned a total of only $150 in credits (6 months before exiting).

Schedule RDC-1 shows us that while 1,496 low-income customers enrolled in arrearage forgiveness in 2020, 305 of those customers earned $100 or less in forgiveness credits (at

[22] COVID-19 is not likely to have skewed this data. During the COVID-19 pandemic months in 2020, Pennsylvania utilities such as Aqua PA did not engage in collection activities or program removal for a failure to comply with program requirements.

maximum, assuming they made all their payments in a timely fashion during their participation before exiting the program); 377 earned $150 or less in forgiveness credits (at maximum); 486 earned $200 or less in forgiveness credits (at maximum).

Q. DO YOU HAVE REASON TO BELIEVE THAT NOT ALL PARTICIPANTS IN AQUA PA'S ARREARAGE FORGIVENESS PROGRAM WERE MAKING TIMELY PAYMENTS?

A. Yes. Aqua PA, upon request through discovery, provided data on the "arrears incurred by participants in the Helping Hands arrearage forgiveness program subsequent to enrollment in the program." Aqua PA said the data was available in the "past due column in attachment for [Confidential] OCA-V-3(a)."[23] Limiting my inquiry to low-income customers who enrolled in the Helping Hands arrearage forgiveness program in January or later, the Aqua PA data shows that substantial numbers of participants incurred arrears subsequent to enrollment in the program.

Table 19. Arrears Incurred Subsequent to Enrollment in Helping Hands Arrearage Forgiveness (January 2021 through August 2021) (Confidential OCA-V-3(a))

Month	Number	Avg Arrears ($s)	Month	Number	Avg. Arrears ($s)
January	52	$953	May	275	$1,302
February	86	$891	June	300	$1,314
March	131	$941	July	267	$1,290
April	197	$1,025	August	257	$1,315

There is no reason to believe that participant payment performance in 2021 is different, let alone substantially better, than participant payment performance in any other year. It

[23]See footnote 19.

is clearly evident that the Aqua PA arrearage forgiveness program as it is currently structured is not providing reasonable benefits to low-income customers.

Q. WHAT DO YOU RECOMMEND?

A. I recommend that the Aqua PA arrearage forgiveness program be modified in the following two ways: (1) arrearage forgiveness credits should be provided upon *either* a timely payment *or* an in-full payment regardless of existing in-program debt; and (2) Aqua PA should increase its arrearage forgiveness credits so that program participants will reduce their pre-existing arrears to $0 over a three-year period.

Q. ARE THERE CUSTOMERS FOR WHOM A THREE-YEAR FORGIVENESS PERIOD WOULD MAKE THE TIME BEFORE THEIR PREPROGRAM ARREARS ARE REDUCED TO $0 LONGER RATHER THAN SHORTER?

A. While there may be an expressed concern about whether there would be "some" customers who would retire their arrears more quickly through a $25/month credit, there is no basis for this concern. When Aqua PA was asked to provide a distribution of low-income arrears by dollar ranges (e.g., $1 - $100, $100 - $200, etc.), Aqua PA responded that "The Company does not track this information for low-income customers." (OCA-II-17). In the meantime, of the arrearage forgiveness participants in August of 2021, we know that the $25/month credit would require more than 200 months of payments (17 years) in order to earn the full credits provided through the program for at least 24 program participants (even assuming that those low-income customers could make 17 straight years of timely payments). (Confidential OCA-V-28).

Q. DO YOU HAVE A THIRD RECOMMENDATION FOR MODIFYING THE AQUA PA ARREARAGE FORGIVENESS PROGRAM?

A. Yes. The application process for Aqua PA's proposed bill discount program, and the ongoing arrearage forgiveness program, should be conformed one with the other. This should occur in two ways. First, customers who are currently participants in Aqua PA's arrearage forgiveness program should be automatically enrolled in the low-income bill discount program that is approved by the Commission. Participation in the arrearage forgiveness program already indicates that the customer has demonstrated their low-income status to the satisfaction of the Company. They should not be required to separately negotiate administrative hurdles to enrollment in the bill discount program.

Second, customers who enroll in Aqua PA's bill discount program should be automatically enrolled in the Company's arrearage forgiveness program as well. It makes no sense to make bills for current service affordable on a going-forward basis if customers are burdened with pre-existing arrears from a time in which their bills were not affordable. Customers do not separately pay their bills for current service and their bills for pre-existing arrears. Instead, they receive, and are held accountable for, their payment toward their total bill.

In sum, there should not be two separate application processes for arrearage forgiveness and for Aqua PA's bill discount program. Participation in the one should automatically result in participation in the other.

Q. DO YOU HAVE REASON TO BELIEVE THAT AQUA PA INTENDS TO HAVE SEPARATE APPLICATION PROCESSES FOR ARREARAGE FORGIVENESS AND FOR ITS BILL DISCOUNT?

A. Yes. Aqua PA explicitly acknowledges that it will not automatically enroll customers participating in the arrearage forgiveness program into its bill discount (once that discount is approved). Instead, Aqua PA states that "Customers with past arrears, such as those participating in Helping Hand, will be prioritized for enrollment outreach efforts when the program is approved for implementation." (OCA-V-30). By saying that it will prioritize arrearage forgiveness participants for "enrollment outreach efforts," Aqua PA is acknowledging that it will not automatically move arrearage forgiveness participants into the bill discount, but will require those participants to engage in a new, and separate, application process.

Q. DO YOU HAVE REASON TO BELIEVE THAT BILLS FOR CURRENT SERVICE REMAIN UNAFFORDABLE TO ARREARAGE FORGIVENESS PARTICIPANTS IN THE ABSENCE OF AQUA PA'S BILL DISCOUNT?

A. Yes. Aqua PA provided information on both household income and household bills for current service for current arrearage forgiveness participants.[24] Given the particular adverse impacts of COVID-19 on the incomes of low-income households during 2020, I have limited my examination to customers who enrolled in the arrearage forgiveness program in 2021. The data is set forth in Table 20 below. For all low-income customers

[24] As referenced above, the confidential nature of the responses involved the fact that the responses provided individually identifiable data. The data gleaned from aggregating and examining that individual information, when no individual information was retained, was not considered to be confidential.

who enrolled in Aqua PA's arrearage forgiveness program in 2021, the average Aqua PA bill burden was 10.6% of income, ten times higher than the affordable burden of 1.5% I discussed in detail above. In the month when bills for current service were the most affordable (August, September), bills burdens were still more than four times higher than the affordable burden of 1.5%.

Table 20. Aqua PA Bill Burdens for Arrearage Forgiveness Participants
by Month of Enrollment (2021 enrollment)
(Confidential OCA-V-43)

Row Labels	Average of Burden
Jan	9.5%
Feb	11.0%
Mar	29.9%
Apr	8.5%
May	8.5%
Jun	8.6%
Jul	13.0%
Aug	6.1%
Sep	6.6%
Grand Total	10.6%

Just as it does not make sense to make bills for current service affordable without providing for the retirement of pre-existing arrearages, it also does not make sense to provide for the retirement of pre-existing arrears without addressing the underlying unaffordability of bills that gave rise to those arrears in the first instance.

Q. HAVE YOU EXAMINED THE ESTIMATED COSTS OF YOUR PROPOSED MODIFICATIONS TO THE ARREARAGE FORGIVENESS PROGRAM?

A. Yes. Based on the performance of participants in Pennsylvania's energy CAPs, I estimate that payment performance will reach 85%, rather than the 70% projected by Aqua PA. The cost of improving the payment performance to this degree is set forth in Table 21.

Table 21. Estimated Incremental Cost Increases Due to Arrearage Forgiveness Modifications

Water	**10%**	**15%**	**25%**
Projected Arrearage Forgiveness at 85% Payment Compliance	$1,239,908	$1,859,862	$3,099,770
Projected Arrearage Forgiveness at 70% Payment Compliance	$1,021,101	$1,531,651	$2,552,752
Incremental Cost of Increasing to 85%	$ 218,807	$328,211	$47,018
Wastewater	**10%**	**15%**	**25%**
Projected Arrearage Forgiveness at 85% Payment Compliance	$122,029	$183,043	$305,072
Projected Arrearage Forgiveness at 70% Payment Compliance	$100,494	$150,742	$251,236
Incremental Cost of Increasing to 85%	$21,535	$32,302	$53,836

As with the bill discount credits, Aqua PA should be allowed to recover only the net costs of the arrearage forgiveness program.

Q. PLEASE EXPLAIN WHY.

A. For qualified Aqua PA customers who participate in the arrearage forgiveness program, pre-program arrears are frozen at the time of enrollment. Once enrolled in the program, Aqua PA no longer pursues collection of the customers' existing (or pre-program) arrears. Given that even though the pre-program arrears remain part of the customer's balance even though they are not enforced upon, those arrearages are included in the Aqua PA billings against which actual collections (i.e., receipts) will be compared to

determine the total Company collection factor. By definition, however, those pre-program arrearages are no longer being subject to collection once the customer enrolls in the arrearage forgiveness program. If they are not removed from the billings in the calculation of the total Company collection factor, rates will be increased to reflect the resulting reduced collection factor. Accordingly, an adjustment needs to be made, as I have done, to the arrearage forgiveness credits that are allowed to be separately included in rates.

The offset factor is designed to prevent Aqua PA from double-collecting a portion of the Arrearage Forgiveness credits. It reflects the fact that, even in the absence of the Arrearage Forgiveness program, Aqua PA would not collect 100% of its low-income arrears. As discussed previously, in discovery, OCA asked that Aqua PA provide any collectability study prepared by or on behalf of the Company. (OCA-II-45). Aqua PA responded that it has not prepared such a collectability study. Without having prepared a collectability study, it is not possible for Aqua PA to have adjusted rates to prevent a double-collection. If it does not know what percentage of its billed revenue it is collecting in the first place, it has no baseline against which to compare how much *less* billed revenue it provides arrearage forgiveness credits.

The lost revenue adjustment I propose is based on the same principles articulated by the Philadelphia Water Department (PWD) when it sought to adjust its rates in its 2021 rate case. In its rate filing, PWD proposed to include the costs of its low-income (Tiered Assistance Program, or TAP) arrearage forgiveness credits through its TAP Rate Rider.

PWD's own consultant, Black and Veatch (PWD St. 7B, 2021 base rate case) stated that: "The proposed AF-Factor is intended to allow the Water Department the ability to recover *a portion* of the costs (in dollars) of providing arrearage forgiveness to eligible TAP Customers." (PWD St. 7B, at 10, emphasis added). Black and Veatch explained: "At the time of the annual TAP-R reconciliation, AF will be determined based upon the actual amount of arrears forgiven in accordance with Section 206.7 of the Water Department's regulations. The total amount of arrearage forgiveness included in determining the TAP-R surcharge rates *will be adjusted by applying a proposed TAP Lost Revenue Adjustment Factor of 9%*." (Id., at 10 – 11, emphasis added). The "lost revenue adjustment factor of 9%" is an acknowledgement of the fact that PWD would fail to collect 91% of the billed revenues included in the pre-program arrears even in the absence of the TAP arrearage forgiveness. Rather than using the same 91% used by PWD, I have adjusted that figure downward to reflect the fact that the age of Aqua PA arrears subject to forgiveness, while substantial, are not nearly as substantial as the age of PWD arrears subject to forgiveness. Rather than applying a 9% Lost Revenue Adjustment Factor, therefore, I apply a 25% Lost Revenue Adjustment Factor (which is an acknowledgement that Aqua PA would fail to collect 75% of the arrears subject to forgiveness).

The 75% factor has a basis in fact beyond being adjusted to reflect the differences between PWD and Aqua PA. In the absence of an Aqua PA collectability study of any sort, I draw upon my experience with other water utilities. For example, in October of this year, I completed a Water Affordability Plan for the City of Toledo (OH). Toledo

Water establishes an allowance for uncollectible account balances based on the age of arrears. According to the 2020 *Financial Overview* for Toledo's Department of Public Utilities (December 2020), Toledo establishes its uncollectible expectations for Toledo Water based on the age of arrears. For arrearages between 60 and 90 days old, Toledo projects a 20% uncollectible, while for arrearages 90 to 180 days old, Toledo projects 40% uncollectability. For arrears between 180 and 365 days old, Toledo projects an uncollectable factor of 75%. As the dollars of arrears falling into older aging buckets increases, in other words, Toledo Water finds it increasingly more difficult to collect the dollars that it bills. As can be seen, the lost revenue adjustment I propose for Aqua PA arrearage forgiveness has an empirical basis and is well within a range of reasonableness. The arrearage forgiveness costs set forth in Table 21 should be adjusted by my recommended lost revenue adjustment.

Part 3. Aqua PA's Management Performance.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine certain aspects of Aqua PA's customer service performance regarding customer service, collections and environmental compliance to assess the extent to which Aqua PA is performing at a level associated with exemplary management. I find that data on customer service, collections, and environmental compliance metrics support the conclusion that Aqua PA does not exhibit exemplary performance with respect to these performance metrics.

Q. WHAT IS THE FIRST METRIC YOU HAVE EXAMINED?

A. The first customer service metric I have examined involves Aqua PA's performance regarding customer complaints. Aqua PA has a high rate of justified consumer complaints handled by the PUC's Bureau of Consumer Services. Its 2020 justified complaint rate of 15% was nearly two times higher than the average for all regulated Class A water utilities (8%) and three times higher than either Pennsylvania American Water Company (PAWC) (5%) or "Other Class A" water utilities (5%).[25] While Aqua PA's performance was somewhat better through the Third Quarter of 2021 (justified rate of 10%), that rate was still higher than all other Pennsylvania Class A water utilities.[26] In contrast, the number of justified payment arrangement request (PAR) complaints against Aqua PA substantially increased in the first three quarters of 2021. As of the end of September 2021, 22% of the reviews of Aqua PA PAR decisions were "justified," compared to 12% for PAWC and to 8% for all other Class A water utilities.

A "justified complaint" is a "consumer complaint where, prior to BCS intervention, the company did not comply with Commission Orders, policies, regulations, reports, Secretarial Letters, tariffs or guidelines when the consumer brought the complaint to the company's attention." (2020 UCARE Quarterly Update, at 20, Glossary of Terms). A justified Payment Arrangement Request is one, "where, prior to BCS intervention, the company did not comply with Commission regulations, reports, Secretarial Letters, tariffs or guidelines." (Id.)

[25] Quarterly Update to UCARE Report (January – December 2020), at 12, available at https://www.puc.pa.gov/filing-resources/reports/consumer-activities-report-evaluation/ (last accessed October 30, 2021).
[26] Quarterly Update to UCARE Report (January – September 2021), at 12.

A utility that leads the state in the percentage of justified consumer complaints and justified payment arrangement requests cannot be found to be exhibiting exemplary management.

Moreover, Aqua PA not only has the highest rate of justified complaints and PARs, but Aqua PA takes the longest time to respond to consumer complaints in the first instance. In 2020, Aqua PA took 14.6 days to respond to consumer complaints, higher than the 12.8 days of water utilities generally. Aqua PA's 16.0 day response time to payment arrangement requests (PARs) was two times longer than the average response time for PA Class A water utilities generally (7.5 days), and nearly three times longer than PAWC's response time (5.6 days). Through the Third Quarter of 2021, while Aqua PA's performance improved relative to other water utilities, it did not perform well with respect to those other utilities. Aqua PA's 16.4 day response time to consumer complaints compares to 15.7 days for all water utilities; Aqua PA's 8.7 day response time to PARs compares to 9.4 for all water utilities.

Even though its justified complaint rate had declined through the first three quarters of 2021 (from 15% to 10%), the *number* of consumer complaints against Aqua PA was significantly higher in 2021 than in 2020. The number of Aqua PA consumer complaints had increased 72% through the Third Quarter of 2021 (compared to 33% for PAWC and negative-2% for all other Class A water utilities).

Q. HAVE YOU EXAMINED ANY OTHER CUSTOMER SERVICE METRIC?

A. Yes. Aqua PA provided information on customer satisfaction from April 1, 2020 to the present. (OCA-I-1(g)). Significant numbers of Aqua PA customers were less than "very satisfied" with Aqua PA's performance in that time period. Only 72% of customers having contact with the utility since April 1, 2020 were either "very" or "extremely" satisfied with respect to their "overall satisfaction." That means that nearly one-of-three persons who had contact with the Company were less than very satisfied. Indeed, nearly one-in-five expressed that they were "not satisfied" (either "not very satisfied" or "not at all satisfied"). One of the areas in which customers were less than satisfied was in the area of "customer effort." Nearly one-in-three customers (29%) having contact with the utility either disagreed or neither agreed nor disagreed with the Aqua PA's customer effort when they had contact with Aqua PA.

Q. WHAT IS THE THIRD METRIC YOU REVIEWED?

A. In addition to the customer service metric I examined above, I reviewed the collections performance of Aqua PA. Aqua PA's performance does not stand out relative to the performance of other Pennsylvania water utilities. For example, while Aqua PA performs better than PAWC in the percentage of residential customers in debt (14.23% vs. 18.15%), it performs substantially less well than other Pennsylvania water utilities. The average percentage of residential customers in debt for other Class A water utilities was 10.62% in 2018 (the last year for which data is available), compared to 14.23% for Aqua PA.[27] The average dollars of arrears for active residential customers was virtually the same for Aqua PA and PAWC as well. As of 2018, while active Aqua PA residential

[27] Pennsylvania PUC, Sixth Report to the General Assembly and the Governor Pursuant to Section 1415, at 42 (January 30, 2020), available at https://www.puc.pa.gov/filing-resources/reports/biennial-report-pursuant-to-section-1415/ (last accessed October 30, 2021).

customers had an average arrears of $176, active PAWC customers carried an average arrearage of $160.

Q. DO YOU HAVE OTHER REASONS TO CONCLUDE THAT AQUA PA HAS NOT PERFORMED WELL WITH RESPECT TO COLLECTIONS?

A. Yes. Aqua PA is not improving its control of residential arrears. According to the PUC's Sixth Report to the General Assembly (regarding Chapter 14), for example, while 3.16% of Aqua PA's residential billings were in debt in 2012, 3.47% of residential billings were in debt in 2018. As shown in Table 22, the average arrearage of both active and inactive residential Aqua PA customers has increased during that time period. In 2017 and 2018, average arrears were substantively higher than they were in 2012 for both active and inactive accounts[28].

Table 22. Average Arrears by Year (active and inactive customers)
(Aqua PA 2012 – 2018)

	2012	2013	2014	2015	2016	2017	2018
Active	$158.09	$152.84	$208.64	$151.85	$169.19	$180.10	$176.00
Inactive	$242.89	$226.02	$268.59	$238.57	$237.23	$223.77	$248.55

It is not merely the average level of arrears, however, that tells the story of how Aqua PA collections have deteriorated. The Pennsylvania PUC's Bureau of Consumer Services has recommended the use of the Bills Behind statistic. The Bills Behind statistic shows how many average bills are included in an arrearage balance. Two customers, each of which has $200 in arrears, for example, are not equally behind if Customer A has an

[28] "Inactive" accounts are accounts that have service terminated or discontinued and arrears or balances have not yet been written-off by the utility. Inactive accounts represent the final step in the collection cycle.

average bill of $100 (2 Bills Behind) and Customer B has an average bill of $50 (4 Bills Behind).

Table 23. Bills Behind by Year (active and inactive customers)
(Aqua PA 2012 – 2018)

	2012	2013	2014	2015	2016	2017	2018
Active	2.4	2.7	3.5	2.6	2.8	3.1	2.9
Inactive	3.6	4.0	4.5	4.0	4.0	3.9	4.1

Q. HAVE YOU REVIEWED ANY OTHER ASPECT OF AQUA PA'S COLLECTION ACTIVITIES?

A. Yes. This deterioration in Aqua PA arrears has occurred despite the fact that Aqua PA has increased the number of accounts it disconnects more than ten-fold since 2012. In 2018, Aqua PA disconnected more than 7,400 residential customers. Its rate of residential nonpayment disconnections (1.85 per 100 customers) was the highest of the seven years reported to the legislature.[29]

Table 24. Residential Nonpayment Disconnections by Year
(Aqua PA 2012 – 2018)

	2012	2013	2014	2015	2016	2017	2018
Disconnections	556	621	6,111	5,294	6,735	5,912	7,415
Disconnect rate (per 100)	0.14	0.16	1.56	1.36	1.70	1.48	1.85

Despite this increase in the intensity of Aqua PA collections, Aqua PA's arrearages, both in absolute dollar terms and in terms of Bills Behind, continues to increase.

[29] Pennsylvania PUC, Sixth Report to the General Assembly and the Governor Pursuant to Section 1415, at 42 (January 30, 2020), available at https://www.puc.pa.gov/filing-resources/reports/biennial-report-pursuant-to-section-1415/ (last accessed October 30, 2021).

Q. HAVE YOU HAD OCCASION TO REVIEW THE EXTENT TO WHICH, IF AT ALL, AQUA PA HAS ENGAGED IN NPDES PERMIT VIOLATIONS?

A. Yes. Aqua PA has been notified by the Department of Environmental Protection on numerous occasions of violations of Aqua PA's National Pollutant Discharge Elimination System (NPDES) permit violations. Documents provided to OCA by Aqua PA indicate that:

- On May 12, 2020, DEP notified Aqua PA that "A review of Aqua Pennsylvania's Wastewater, Inc.'s Discharge Monitoring Reports (DMRs) has indicated a pattern of effluent violations with respect to the limitations set forth in NPDES Permit No. PA0061719." The violations cited in this May 12, 2020 notice occurred over an extended period of time, beginning in September 2015 and continuing through June 2019.

- On November 30, 2020, DEP again notified Aqua PA that "A review of Aqua Pennsylvania Wastewater, Inc., Mast Hope Development's (Aqua-Mast Hope) Discharge Monitoring Reports (DMRs) has indicated a pattern of effluent violations with respect to the limitations set forth in NPDES Permit No. PA0060496." The notice cited violations occurring from February 2019 to August 2020.

- On July 16, 2021, DEP notified Aqua PA that it had "conducted an administrative review of the discharge monitoring reports" submitted pursuant to Aqua PA's NPDES permit (PA0228061). The correspondence identified "effluent results exceeding limitations set forth in. . .your NPDES Permit." DEP told Aqua PA that "these effluent exceedances. . .constitute violations f your NPDES Permit and Section 202 of the Clean Streams Law. . ." The list of violations cited in the July 16th correspondence began in October 2018 and continued December 31, 2020. DEP told Aqua PA that "the above noted violations constitute unlawful conduct under Section 611 of the Clean Streams Law. . ."

- As recently as October 12, 2021, DEP notified Aqua PA that an administrative review of the DMRs submitted in accordance with NPDES Permit PA0228061 revealed effluent results that continue to exceed limitations set forth in the Permit. DEP again informed Aqua PA that "the above noted

> violations constitute unlawful conduct under Section 611 of the Clean Streams Law. . .”

(OCA-VIII-29, Attachment 1).

Q. WHAT DO YOU CONCLUDE?

A. Based on the data and discussion above, I conclude that the Aqua PA performance regarding customer service, collections and environmental compliance does not support the conclusion that Aqua PA has engaged in superior management that would, in turn, support a higher return on equity.

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Schedule RDC-1

Aqua PA Arrearage Forgiveness Participants by Month of Enrollment (Rows) and Number of Months Before Exit (Columns)

	Number of Months Before Exit																					
Month of Enrollment	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**Active**	**Grand Total**
2020																						
Jan			17																			17
Feb		18																				18
Mar	17	13	9	5	5	4	1	2	7		1	5	1	4	10	2	3	6	25	21	46	187
Apr																					2	2
May	2	11	12	11	5	1	6	1	1	1	3	4	10	3	7	10	12	16			40	156
Jun	17	9	13	2	11	5	5	5	5	2	8	15	17	21	25	23	40				80	303
Jul	12	19	3	2	7	2	3	15	2	9	18	5	16	22	13	23					73	244
Aug	5	6	5	1		1	3	3	2	12	5	12	12	10	16						54	147
Sep	5	5	2	1	1	7	3	6	5	3	2	6	3	2							37	88
Oct	3	2	2	4	2	3	7	5	5	15	8	4	3								34	97
Nov	5		2	3	4	3	3	4	16	12	6	13									34	105
Dec	2	4	7	2	12	3	12	6	19	2	12										45	126
2021																						
Jan	5	3	3	3	6		7	7		3											17	54
Feb	3	1	3	6	4	2	3	1	2												16	41
Mar	3	1	9	3	7	2	1	5													19	50
Apr	2	5	1	5	11	11	5														45	85
May	4	1	3	4	6	25															40	83
Jun	4	6	1	3																	32	46
Jul		1	1																		8	10
Aug		1																			8	9
Sep																					15	15
Oct																					1	1
Grand Total	**89**	**106**	**93**	**55**	**81**	**69**	**59**	**60**	**64**	**59**	**63**	**64**	**62**	**62**	**71**	**58**	**55**	**22**	**25**	**21**	**646**	**1884**

Schedule RDC-2

Aqua PA Arrearage Forgiveness Participants by Number of Months from Enrollment to Present (Rows) and Number of Months Before Exit (Columns)

	Number of Months before Exit																					
Months from enrollment to present (Oct. 2021)	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**Active**	**Grand Total**
2020																						
9	2	3	1	2	3	2	1	1													7	22
10	3	1	7		12	2	14	5	27	2	16	4									47	140
11	3		2	7	2	2	4	8	10	22	3	12									40	115
12	4	2	1		1	7	4	5	5	6	7	2	4								30	78
13	4	9	2	1	1	3	3	2	4	7	2	9	3	5	4						40	99
14	6	5	6	2	1	1	3	4	2	9	7	8	15	10	16	3					60	158
15	15	20	5	2	10	4	2	17	1	7	19	9	15	31	13	23	5				66	264
16	13	6	17	3	9	3	8	2	5	2	5	11	16	9	23	26	36	5			80	279
17	1	10	5	9	3	1	3	1	1	1	3	4	8	3	5	4	11	11			28	112
18	1																				1	2
19	16	18	9	5	5	4	1	2	7		1	5	1	4	10	2	3	6	25	21	46	191
20		13	4																			17
21			13																			13
2021																						
0																					7	7
1		1																			10	11
2			1																		10	11
3	4	1		1																	9	15
4	2	7	2	4	6	8															45	74
5	2	2	3	5	8	23															50	93
6	4	3	7	2	8	6	6														22	58
7	2	2	3	4	2	1		6													25	45
8	6	2	3	8	6	2	7	1	2												11	48
9	1	1	2		4		3	6		3											12	32
Grand Total	**89**	**106**	**93**	**55**	**81**	**69**	**59**	**60**	**64**	**59**	**63**	**64**	**62**	**62**	**71**	**58**	**55**	**22**	**25**	**21**	**646**	**1884**

Appendix

Roger Colton
Fisher, Sheehan & Colton
Public Finance and General Economics
Belmont, MA

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EDUCATION:

J.D. (Order of the Coif), University of Florida (1981)

M.A. (Regulatory Economics), McGregor School, Antioch University (1993)

B.A. Iowa State University (1975) (journalism, political science, speech)

PROFESSIONAL EXPERIENCE:

Fisher, Sheehan and Colton, Public Finance and General Economics: 1985 - present.

As a co-founder of this economics consulting partnership, Colton provides services in a variety of areas, including: regulatory economics, poverty law and economics, public benefits, fair housing, community development, energy efficiency, utility law and economics (energy, telecommunications, water/sewer), government budgeting, and planning and zoning.

Colton has testified in state and federal courts in the United States and Canada, as well as before regulatory and legislative bodies in more than three dozen states. He is particularly noted for creative program design and implementation within tight budget constraints.

PROFESSIONAL AFFILIATIONS:

Past Chair:	Belmont Zoning By-law Review Working Committee (climate change)
Member:	Board of Directors, Massachusetts Rivers Alliance
Columnist:	Belmont Citizen-Herald
Producer:	Belmont Media Center: BMC Podcast Network
Host:	Belmont Media Center: Belmont Journal
Member:	Belmont Town Meeting
Vice-chair:	Belmont Light General Manager Screening Committee
Past Chair:	Belmont Goes Solar
Coordinator:	BelmontBudget.org (Belmont's Community Budget Forum)
Coordinator:	Belmont Affordable Shelter Fund (BASF)

Past Chair: Belmont Solar Initiative Oversight Committee
Past Member: City of Detroit Blue Ribbon Panel on Water Affordability
Past Chair: Belmont Energy Committee
Member: Massachusetts Municipal Energy Group (Mass Municipal Association)
Past Chair: Housing Work Group, Belmont (MA) Comprehensive Planning Process
Past Member: Board of Directors, Belmont Housing Trust, Inc.
Past Chair: Waverley Square Fire Station Re-use Study Committee (Belmont MA)
Past Member: Belmont (MA) Energy and Facilities Work Group
Past Member: Belmont (MA) Uplands Advisory Committee
Past Member: Advisory Board: Fair Housing Center of Greater Boston.
Past Chair: Fair Housing Committee, Town of Belmont (MA)
Past Member: Aggregation Advisory Committee, New York State Energy Research and Development Authority.
Past Member: Board of Directors, Vermont Energy Investment Corporation.
Past Member: Board of Directors, National Fuel Funds Network
Past Member: Board of Directors, Affordable Comfort, Inc. (ACI)
Past Member: National Advisory Committee, U.S. Department of Health and Human Services, Administration for Children and Families, Performance Goals for Low-Income Home Energy Assistance.
Past Member: Editorial Advisory Board, International Library, *Public Utility Law Anthology*.
Past Member: ASHRAE Guidelines Committee, GPC-8, *Energy Cost Allocation of Comfort HVAC Systems for Multiple Occupancy Buildings*
Past Member: National Advisory Committee, U.S. Department of Housing and Urban Development, Calculation of Utility Allowances for Public Housing.
Past Member: National Advisory Board: Energy Financing Alternatives for Subsidized Housing, New York State Energy Research and Development Authority.

PROFESSIONAL ASSOCIATIONS:

National Association of Housing and Redevelopment Officials (NAHRO)
National Society of Newspaper Columnists (NSNC)
Association for Enterprise Opportunity (AEO)
Iowa State Bar Association
Energy Bar Association
Association for Institutional Thought (AFIT)
Association for Evolutionary Economics (AEE)
Society for the Study of Social Problems (SSSO)
Association for Social Economics

BOOKS

Colton, *et al.*, ***Access to Utility Service***, National Consumer Law Center: Boston (4th edition 2008).

Colton, *et al.*, ***Tenants' Rights to Utility Service***, National Consumer Law Center: Boston (1994).

Colton, ***The Regulation of Rural Electric Cooperatives***, National Consumer Law Center: Boston (1992).

BOOK CHAPTERS

Colton (2018). The equities of efficiency: distributing energy usage reduction dollars, Chapter in Energy Justice: US and International Perspectives (Edited by Raya Salter, Carmen Gonzalez and Elizabeth Ann Kronk Warner), Edward Elgar Publishing (London, England).

JOURNAL PUBLICATIONS

65 publications in industry and academic journals, primarily involving utility regulation and affordable housing. (list available upon request)

TECHNICAL REPORTS

200 technical reports for public-sector and private-sector clients (list available upon request)

JURISDICTIONS IN WHICH EXPERT WITNESS PROVIDED

1. Maine
2. New Hampshire
3. Vermont
4. Massachusetts
5. Massachusetts
6. Rhode Island
7. Connecticut
8. New Jersey
9. Maryland
10. Pennsylvania
11. Washington D.C.
12. Virginia
13. North Carolina
14. South Carolina
15. Florida (Federal Court)
16. Alabama
17. Mississippi
18. Tennessee
19. Kentucky
20. Ohio
21. Indiana
22. Michigan
23. Wisconsin
24. Illinois
25. Minnesota
26. Iowa
27. Missouri
28. Arkansas
29. Texas (Federal Court)
30. South Dakota
31. North Dakota
32. Montana
33. Colorado
34. New Mexico
35. Arizona
36. Utah
37. Idaho
38. Nevada
39. Washington
40. Oregon
41. California
42. Hawaii

Canadian Provinces

1. Nova Scotia
2. Ontario
3. Manitoba
4. British Columbia

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Direct Testimony, OCA Statement 5, 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: November 10, 2021
*319612

Signature: _____
Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3027385 (Water)
	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (Wastewater)
v.	:	C-2021-3028467 (Wastewater)
	:	
Aqua Pennsylvania, Inc. and	:	
Aqua Pennsylvania Wastewater, Inc.	:	

DIRECT TESTIMONY

OF

BARBARA R. ALEXANDER

Barbara Alexander Consulting LLC

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

November 10, 2021

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

A. My name is Barbara R. Alexander. I am the sole member/owner of Barbara Alexander Consulting LLC. I am a consultant on consumer protection and customer service issues associated with utility regulation. My address is 83 Wedgewood Dr., Winthrop, ME 04364. I appear in this case as a witness on behalf of the Office of Consumer Advocate (OCA).

Q. PLEASE DESCRIBE YOUR BACKGROUND AND QUALIFICATIONS.

A. I opened my consulting practice in March 1996, after nearly ten years as the Director of the Consumer Assistance Division of the Maine Public Utilities Commission. While there, I managed the resolution of informal customer complaints for electric, gas, telephone, and water utility service, and testified as an expert witness on consumer protection, customer service and low-income issues in rate cases and other investigations before the Commission. My current consulting practice is directed to consumer protection, customer service and low-income issues associated with both regulated utilities and retail competition markets. I have testified on behalf of national and state consumer and public advocate representatives in over 30 states and Canadian jurisdictions. I have published widely on consumer protection, service quality, universal service, and retail competition policies and programs. I have assisted the Pennsylvania OCA in its restructuring activities concerning electricity and natural gas since 1997, numerous rulemaking proceedings relating to customer service, reliability of service, and consumer protection regulations. I have assisted the OCA as an expert witness in

numerous merger and sale proceedings involving Pennsylvania electric, natural gas, and water and sewer utilities, including the application of Aqua American, Inc. to purchase the Peoples Natural Gas distribution companies in Pennsylvania in Docket Nos. 2018-3006062 and A-2018-3006063. In addition, I have recently testified on behalf of the OCA in several recent rate cases involving Pittsburgh Water and Sewer Authority as part of a multi-year transition for that water and sewer utility to oversight and regulation by the Pennsylvania Commission.

I am a graduate of the University of Michigan (1968) and the University of Maine School of Law (1976). I do not practice law at this time.

I attach my Resume as Exhibit BA-1.

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. I am filing Direct Testimony in response to the Application by Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc. (Aqua) to increase its rates for water and wastewater service for Pennsylvania customers. My testimony addresses the consumer protection and service quality performance of Aqua, critical aspects of a public utility's justification for base rate increases. This relationship is particularly important in this case due to the magnitude and percentage bill increases proposed by Aqua for its residential customers.

Q. DO THE ISSUES YOU WILL DISCUSS RELATE TO THE AQUA-PEOPLES ACQUISITION PROCEEDING?

A. Yes. That proceeding, where Aqua's parent company acquired Peoples Gas, resulted in a settlement that includes several commitments by Aqua that impact their customer service

performance to Pennsylvania customers. I will discuss how Aqua has met or not met those requirements.

Q. DID AQUA'S APPLICATION FOR THESE SIGNIFICANT RATE INCREASES DISCUSS ITS SERVICE QUALITY AND CUSTOMER SERVICE PERFORMANCE OR OTHERWISE REFLECT THE STATEMENTS ASSOCIATED WITH ITS SECTION 1329 ACQUISITIONS THAT PROMISED IMPROVED SERVICE QUALITY?

A. No. None of the witnesses who provided testimony in support of Aqua's proposed rate increases discuss Pennsylvania customer service performance, consumer protection policies, or otherwise made any reference to the service quality requirements of the 2019 Settlement that resolved the Aqua-Peoples merger. Nor did these witnesses reference or document compliance with the customer service benefits identified in their Section 1329 acquisition proceedings.

Q. WHAT OTHER ISSUES WILL YOU ADDRESS IN YOUR TESTIMONY?

A. Relying on discovery responses in this proceeding, I will also address Aqua's service quality performance and consumer protection policies reflected in the Commission's customer service and consumer protection regulations.

Q. PLEASE IDENTIFY THE EXHIBITS ATTACHED TO YOUR TESTIMONY.

A. The following Exhibits are attached to my testimony:

- Exhibit BA-1: Barbara Alexander C.V.
- Exhibit BA-2: Aqua Response to OCA-I-1(a) with Ms. Alexander's annual average calculations.

- Exhibit BA-3: Aqua Response to OCA-IX-30.
- Exhibit BA-4: Aqua Response to OCA-IX-35
- Exhibit BA-5: Aqua Response to OCA-IX-31.
- Exhibit BA-6: Aqua Response to OCA-IX-36.
- Exhibit BA-7: Aqua Response to OCA-IX-21 and OCA-IX-22 (and attachment).

II. SUMMARY OF RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. I propose the following with respect to my analysis and findings concerning Aqua's commitments for certain service quality performance standards in the Aqua-Peoples Gas merger settlement.

- Aqua should be held accountable for the previously agreed to performance standards. Aqua should develop and submit a compliance plan to the stakeholders that, after review, should be submitted to the Commission for approval and implementation. This compliance plan should include specific action steps and deadlines to achieve compliance.
- In addition, Aqua should be held accountable for the failure to comply with these provisions documented in my testimony with a critical view of Aqua's proposed Return on Equity. Considering my findings and those documented by Mr. Roger Colton on behalf of the OCA, there is sufficient justification to reject Aqua's claim of "exemplary" management as well as support for a consideration of an ROE that reflects the lower bound of reasonableness. My review of the customer service

benefits identified by Aqua in its Section 1329 acquisition proceedings and the lack of any documentation of those customer service performance benefits in this rate case also supports this recommendation.

Q. WITH REGARD TO YOUR PRESENTATION OF ADDITIONAL SERVICE QUALITY AND CUSTOMER SERVICE PERFORMANCE ISSUES IDENTIFIED IN YOUR TESTIMONY, WHAT DO YOU RECOMMEND?

A. I propose the following conditions that should accompany any consideration of a rate increase and should be required within 60 days after a final order in this proceeding:

- Oversight of the Call Center compliance with Pennsylvania consumer protection rules and policies: Aqua should be required to develop and submit a plan that describes specific auditing and oversight policies applicable to its call centers with regular reporting on the results of such evaluations and audits.
- Termination of Service: Aqua should be required to develop specific training programs for its field personnel authorized to terminate service that explicitly include the obligation to attempt personal contact with a responsible adult immediately prior to termination of service, as well as the recognition and response to the consumer protection rights associated with contact.
- Reconnection of service: In light of Aqua's policy that does not track "reconnection" obligations and rights after a certain time after termination for nonpayment, Aqua should be required to either revise its procedures and document compliance with restoration of service rights and remedies or describe how its current policies reflect these obligations.

- Identification of customer disputes: Aqua should adopt a policy that explicitly asks customers if he/she is satisfied with the response to an inquiry or concern to identify potential customer disputes.
- Third-party payment fees: Aqua should be required to explicitly consider the elimination of third party payment fees and evaluate the benefits and costs associated with eliminating fees to make payments on their IVR and e-billing web portal and report to stakeholders.
- Aqua's charging late fees to customers during the COVID-19 Pandemic: Aqua should evaluate its communications to customers during the Pandemic and consider a policy of forgiveness of late fees imposed during the Pandemic, particularly for lower income customers.

III. SUMMARY OF AQUA'S COMMITMENTS IN THE SETTLEMENT OF THE AQUA-PEOPLES MERGER

Q. PLEASE DESCRIBE THE SETTLEMENT CONDITIONS THAT AQUA AGREED TO MEET WITH RESPECT TO SERVICE QUALITY AND CUSTOMER SERVICE PERFORMANCE.

A. In the 2018 settlement approved by the Commission in the Aqua-Peoples merger proceeding, Aqua agreed to meet certain service quality and customer service performance standards and requirements.[1] The following commitments are relevant to my review and analysis of Aqua's performance in this base rate proceeding:

[1] Joint Petition for Approval of Non-Unanimous, Complete Settlement Among Most Parties, Docket Nos. A-2018-3006061, A-2018-3006062, and A-2018-3006063 (June 26, 2019) (Aqua-Peoples Merger)

E. Service Related Commitments

83. Aqua commits to improve Aqua's call center performance to meet or exceed the same performance standards that the Peoples Companies agreed to meet in the 2013 Settlement concerning the acquisition of Equitable Gas Company (Docket No. A-2013-2353647 et al.) for the following three metrics in each of the five calendar years (2020-2024) following closing:

i. percent of calls answered within 30 seconds of at least 82%,
ii. busy-out rate of no more than 0.25%,
iii. average call abandonment rate that is no higher than 4% for 2020-2021, no higher than 3% for 2022-2023, and no higher than 2.5% for 2024.

84. Aqua America will maintain, at the minimum, the Peoples Companies capital expenditures at pre-acquisition budgeted levels, and will provide to the OCA, I&E and OSBA with projected expenditures for 2019 and 2020.

85. Aqua PA will develop a system to track Aqua PA customer complaints in a live Excel spreadsheet, consistent with Paragraph 47 in the Joint Petition for Settlement submitted in Aqua PA's recent base rate case (Docket Nos. R-2018-3003558 and R-2018-3003561). Aqua PA will review this information and conduct a root cause analysis of adverse trends at least annually.

86. Aqua PA will commit to a significant reduction in the number of days to respond to customer complaints so that, within 24 months, the average is less than 10.

87. Aqua PA will develop and adopt a methodology to track whether appointments are made and kept for field operations in a manner similar to that used by the Peoples Companies within 18 months and adopt internal performance standards that meet or exceed those of the Peoples Companies for this performance standard for five years.

88. Aqua PA will meet its internal 2019 performance objectives as listed below and will continue to establish and strive to meet comparable or more strict performance objectives for five years:

i. Estimate read rate – less than 0.5%
ii. Actual read rate – 99%
iii. Lost time accidents – 19
iv. Responsible vehicle accidents – 4.1
v. Compliance with water regulations – 99.5%
vi. Compliance with wastewater regulations – 94.5%

89. Aqua PA will provide a report to OCA, I&E, and OSBA each calendar

year for a period of five years following closing regarding its achievement of the service quality metrics listed in Paragraphs 83-88. The report will outline the actual metrics achieved and additional actions expected to be taken in the following year to further improve customer service. If Aqua PA has not achieved an identified metric, the report must also include the reasons for the failure and Aqua PA's plan to reach the service quality metric. Aqua PA must then convene a collaborative with OCA, I&E, and OSBA to discuss such report.

IV. AQUA PROMISES FOR CUSTOMER SERVICE BENEFITS IN THE SECTION 1329 ACQUISITION PROCEEDINGS

Q. PLEASE DESCRIBE THE BENEFITS THAT AQUA ROUTINELY PROMISED IN SECTION 1329 PROCEEDINGS TO ACQUIRE LOCAL WASTEWATER SYSTEMS IN PENNSYLVANIA.

A. This proceeding includes the following Section 1329 acquisitions: New Garden, Limerick, East Bradford, Cheltenham, and East Norriton. Aqua's testimony in those acquisition proceedings with regard to affirmative public benefits is similar. Aqua's promises, while vague, specifically promise "enhanced customer service" with a reference to the ability of its new customers to obtain services via its unified call center to handle customer service matters and respond to outages, as well as the option of setting up an account online to pay bills.[2]

V. ANALYSIS OF AQUA'S CUSTOMER SERVICE PERFORMANCE

Q. MR. PACKER STATES THAT AQUA HAS SATISFIED ALL THE COMMITMENTS

[2] See, e.g. Mr. Packer's testimony in the East Norriton acquisition (Docket No. A-2019-3009052, Aqua Statement No. 1 at 17-18). https://www.puc.pa.gov/pcdocs/1629660.pdf

OF THE 2018 BASE RATE CASE SETTLEMENT AGREEMENT, CITING TO PAGES 6 THROUGH 25.[3] DID MR. PACKER OR OTHER AQUA WITNESSES REFERENCE THE CUSTOMER SERVICE REQUIREMENTS REFLECTED IN THE SETTLEMENT OF THE MERGER PROCEEDING?

A. No. As I will document below, there are several settlement agreements relating to customer service performance that do not appear to be satisfied.

Q. PLEASE DESCRIBE AQUA'S COMPLIANCE WITH THE CALL CENTER PERFORMANCE SETTLEMENT CONDITIONS.

A. Aqua has two call centers that handle calls from Pennsylvania customers located in Illinois and North Carolina.[4] The Aqua-Peoples Settlement (¶ 83) requires annual average performance standards in three areas that can be measured to reflect the performance provided to Pennsylvania customers. Since both call centers handle calls from all of Aqua's customers in several states, the performance standards reflect the average of all calls at both call centers. Specifically, Aqua agreed to annual average performance in three areas: answer at least 82% of the customer calls within 30 seconds at its call center, maintain a busy-out rate of no more than 0.25%, and meet an abandonment call rate (measured by customers who hang up after entering the queue to speak to a representative) no higher than 4% for 2020-2021, no higher than 3% for 2022-2023, and no higher than 2.5% for 2024.

Aqua's call center performance was provided in Aqua's Response to OCA-I-1(a). I attach Exhibit BA-2 that calculates the annual average results for each of the

[3] Aqua Statement No. 1, Packer at 45.
[4] Aqua Response to OCA-IX-18.

performance standards using the monthly information provided by Aqua in this data response. However, Aqua has never met the 82% call answering standard as measured by the typical measurement of the percentage of calls in which the customer actually seeks to talk to a live representative. As measured by the calls in which the customer selects the option to speak with a customer service representative (CSR), the annual calls answered average for 2019 was 70.56%, for 2020 was 72.86%, and for 2021 through July was 50.64%. Aqua also calculates the percentage of calls answered within 30 seconds based on the combination of the results for customers seeking to speak to a CSR with all the calls handled without speaking to a CSR through its automated menu interactive voice response (IVR) system, calling this calculation an "aggregate."[5] While that percentage is above 82% for 2019 and 2020, this calculation does not reflect the experience of a customer who affirmatively selects the option to speak with the CSR and does not, in my opinion, reflect the intent of the settlement.

Aqua has met the busy-out rate standard and that indicates that its IVR does not provide a busy signal to customers who seek to contact Aqua through its call center.

The annual abandonment rate standard has not been met: 4.56% in 2019, 4.32% in 2020, and a very significant deterioration in 2021 with a rate of 13.15% through July. Again, Aqua also measures the abandonment rate by combining the performance when customers seek to speak to a CSR with all calls handled via the IVR, an "aggregate" calculation that does not actually measure a customer's experience with attempting to reach the CSR.[6] Aqua states that its assertion of compliance with these settlement

[5] Aqua Response to OCA-IX-1.
[6] Aqua Response to OCA-IX-2.

1 standards for its call center performance should be measured by these "aggregate"
2 calculations.[7] I disagree.
3 This performance may also explain the relatively below average customer
4 satisfaction with Aqua's telephone service that is documented by its own customer
5 surveys. The most recent data shows that only 73% of customers with a recent telephone
6 call center transaction rated satisfaction as "excellent" or "very good."[8] This level of
7 customer satisfaction is low compared to Pennsylvania electric and gas distribution
8 companies where over 80% of customers typically score as "very satisfied" with their
9 interaction with the utility's CSR.[9]
10 Q. HAS AQUA DEVELOPED THE "LIVE" CUSTOMER COMPLAINT SPREADSHEET
11 AND CONDUCTED A ROOT CAUSE ANALYSIS OF ITS CUSTOMER
12 COMPLAINT DATA AS REQUIRED BY THE SETTLEMENT?
13 A. No. Every Pennsylvania public utility is required to educate customers about how to
14 register informal and formal complaints, the former resolved by the Commission's
15 Bureau of Consumer Services because of a customer's dissatisfaction with the utility's
16 response and the latter handled as a formal matter by the Commission because of a
17 formal filing by the customer or group of customers. Utilities also receive "disputes"
18 directly from customers and are obligated to investigate and respond to those issues or
19 indications of dissatisfaction. Customer complaints typically form a hierarchy or

[7] Aqua's Annual Report as required by these settlement provisions filed on February 1, 2021 (attached to Aqua's Response to OCA-I-11) reflects reported metrics that reflect the "aggregate" definitions. See also, Aqua Response to OCA-IX-28 that confirms that its reported performance results reflect the "aggregate" calculations.
[8] Aqua Response to OCA-I-1(g).
[9] 2020 Customer Service Report at 24. https://www.puc.pa.gov/media/1658/customer_service_performance_report2020.pdf I realize that the survey methodologies and categorization of responses may be different, but the overall trend is apparent.

pyramid from a large volume of disputes to a smaller group of informal complaints to the BCS and a relatively small number of formal complaints filed with the Commission. Tracking and evaluating disputes and informal or formal complaints are key to ensuring ongoing improvements in customer service because that evaluation is likely to spot the "red flag" that indicates a systemic issue or concern that requires management's attention and, in some cases, a change in policy or procedure. In addition, of course, this type of evaluation may also identify violations of the Commission's regulations.

According to Aqua, it is still "working" on developing this "live" presentation for tracking customer complaints.[10] A confidential spreadsheet was attached that lists customer complaints and a column identifies the "root cause." While this data request explicitly asked for the required root cause analysis, Aqua's response failed to provide any information on this requirement, and I conclude that Aqua has not yet conducted the root cause analysis of customer complaint data. Nor did Aqua provide the requested information on the methodology and timetable for the completion of this root cause analysis, a process that requires far more than creating a spreadsheet of complaint data. A root cause analysis requires a fundamental review of the policies and practices that resulted in the complaint and the internal evaluation of how to prevent the complaint or fix the underlying cause. Nor does Aqua have a methodology to track whether its response to the customer's initial dispute or complaint was incorrect or improper,[11] which is a key component of any root cause analysis of customer complaints.

[10] Aqua Response to OCA-IX-30.
[11] Aqua Response to OCA-IX-3: "Aqua does not currently track or have a means to determine whether the initial response to the customer was incorrect or improper."

1 This lack of analysis of customer complaint trends and identification of the root
2 cause for any complaint trends is also troubling in light of the volume of "justified"
3 complaints and "notices of infractions" from the Commission's Bureau of Consumer
4 Services after that office's handling of informal complaints submitted by Aqua
5 customers. According to the Commission's Bureau of Consumer Services reports, Aqua
6 had the highest percentage of "justified" consumer complaints in 2020 compared to other
7 Pennsylvania water utilities—16% of the closed and evaluated customer complaints
8 compared to 5% for other major water utilities.[12] Aqua also had a significant reduction in
9 the percentage of complaints that were resolved on the first contact—a 42% reduction in
10 2020 compared to 2019.[13] This Report also documented 26 verified infractions of
11 Chapter 56 by Aqua.[14]
12 The term "justified consumer complaints" is defined by the BCS as a failure to
13 apply the proper policies at the time of the complaint to the PWSA.[15] The term "verified
14 infractions" refers to complaints in which the BCS found that specific billing and
15 customer service policies were not properly applied.[16]
16 When asked for their analysis of this information that reflects potential
17 noncompliance, Aqua responded only with the listing of the number of such BCS
18 findings for each category.

[12] 2020 Utility Consumer Activities Report and Evaluation, at 12. https://www.puc.pa.gov/media/1380/ucare_2020-4q.pdf
[13] Ibid., at 11.
[14] Ibid., at 19.
[15] Defined by BCS as: A consumer complaint case where, prior to BCS intervention, the company did not comply with Commission Orders, policies, regulations, reports, Secretarial Letters, tariffs, or guidelines when the consumer brought the complaint to the company's attention. The justified consumer complaint rate equals the number of justified consumer complaints for each 1,000 residential customers.
[16] Defined by BCS as: A misapplication or infringement of a Commission regulation, particularly the standards and billing practices for residential utility service.

I attach Aqua's narrative response to OCA-IX-30 as Exhibit BA-3 (previously cited in footnote 10 and provides Aqua's response to the request to provide the plan and methodology for the required root cause analysis) (without confidential attachment). I attach Aqua's narrative response to OCA-IX-35 that provides the summary of the "justified" and "verified" complaints as Exhibit BA-4 (without confidential attachment).

Q. HAS AQUA MET ITS REQUIREMENT TO SIGNIFICANTLY REDUCE THE NUMBER OF DAYS TO RESPOND TO CUSTOMER COMPLAINTS SO THAT, WITHIN 24 MONTHS, THE AVERAGE IS LESS THAN 10 AS REQUIRED BY THE SETTLEMENT?

A. No. Aqua's response time to customer complaints averaged 15 in 2020 and 13 in 2021 through October. I attach Aqua's response to OCA-IX-31 as Exhibit BA-5.

Q. HAS AQUA MET THE OTHER PERFORMANCE CRITERIA INCLUDED IN PARAGRAPH 88 OF THE AQUA-PEOPLES SETTLEMENT?

A. Yes.

Q. IN YOUR OPINION HAS AQUA DELIVERED QUANTIFIABLE BENEFITS FOR CUSTOMER SERVICE PERFORMANCE AS A RESULT OF ITS SECTION 1329 ACQUISITIONS?

A. Contrary to Mr. Packer's testimony I previously quoted in recent Section 1329 proceedings, the call center is not performing according to its promised performance standards and has come with the inability of Pennsylvania customers to use their local municipal offices to pay Aqua bills and handle routine customer service requests and

needs.[17] Aqua does not maintain any office in Pennsylvania in which its customers are invited to appear in person to discuss billing, payment, or customer service issues.[18] Furthermore, as discussed below, Aqua's web portal promotes certain electronic payment options, but only for an additional fee. As a result, I conclude that there has been a degradation in customer service for the customers of these acquired wastewater systems.

VI. AQUA'S COMPLIANCE WITH CONSUMER PROTECTION REGULATIONS AND BEST PRACTICES

Q. DO YOU HAVE ANY CONCERNS WITH RESPECT TO AQUA'S COMPLIANCE WITH CHAPTER 56 AND OTHER BEST PRACTICES IN THE IMPLEMENTATION OF APPLICABLE CONSUMER PROTECTION REGULATIONS?

A. Yes. I will discuss the following issues in this section of my testimony:

- Oversight of the Call Center compliance with Pennsylvania consumer protection rules and policies;
- Termination of Service: obligation to attempt personal contact with a responsible adult immediately prior to termination of service;
- Reconnection of service: obligation to continue service when certain criteria are met;
- Identification of customer disputes;
- Third-party payment fees promoted by Aqua; and
- Aqua's charging late fees to customers during the COVID-19 Pandemic.

Q. HAS AQUA DOCUMENTED HOW IT ENSURES THAT THESE CALL CENTER EMPLOYEES LOCATED IN ILLINOIS AND NORTH CAROLINA AND WHO

[17] Aqua's Response to OCA-IX-20 stated in response to the request to confirm that upon acquiring local water and wastewater systems that those offices closed and required Aqua's new customers to interact via Aqua's call center, "In each of these instances, the municipal offices were not closed as they continue to provide other municipal functions." This response appears to confirm that while the offices remain available for "other" municipal functions, they are no longer available for the water/wastewater business previously provided to local customers.

[18] Aqua Response to OCA-IX-19.

ALSO SERVE AQUA CUSTOMERS IN MANY STATES COMPLY WITH PENNSYLVANIA'S CHAPTER 56 CONSUMER PROTECTION REQUIREMENTS?

A. No. While Aqua has provided the internal training documents that reflect Pennsylvania-specific consumer protection policies and requirements,[19] Aqua has not provided any documentation that the actual training is accompanied by routine oversight and auditing to ensure compliance. When asked how Aqua supervises or investigates whether the call centers are complying with Pennsylvania requirements, the Company stated that calls are monitored, CSRs are coached, and that ongoing changes in the regulations are tracked to make sure that their internal documents are correct. I attach Aqua Response to OCA-IX-36 as Exhibit BA-6. This high-level statement and lack of any documentation as to actual monitoring, internal reports of coaching, or any other indicia of audits or oversight is troubling. Furthermore, this concern is highlighted by the justified complaints and verified infractions described above.

Q. PLEASE DESCRIBE YOUR CONCERN WITH RESPECT TO AQUA'S OBLIGATION TO ATTEMPT PERSONAL CONTACT IMMEDIATELY PRIOR TO TERMINATION OF SERVICE.

A. Aqua is obligated to attempt personal contact with a responsible adult immediately prior to termination of service.[20] While asked to provide the specific training materials to implement this requirement, Aqua has not provided any internal training materials or documentation of the requirement of the regulation that requires field personnel of utilities to attempt contact by knocking on the door or interacting with a responsible adult

[19] Aqua Response to OCA-I-2 and attachments provided the requested training documents.
[20] Chapter 56. 52 Pa. Code §§ 56.94, 56.334.

who is present prior to turning the valve to shut off the water (or electricity or natural gas for those utilities). This interaction, should it occur, is explicitly required to ensure that the customer's rights are recognized and responded to in the event of (1) allegation of payment; (2) presence of medical emergency; (3) assertion of rights pursuant to victims of domestic violence or abuse; and (4) availability of universal service programs. Aqua's inability to provide the internal training documents to show how this requirement is being implemented suggests that this consumer protection policy is not being implemented. When asked for the documentation for compliance with this policy and how their field technicians are instructed to respond to the situations explicitly identified in this regulation, Aqua states that field personal are instructed to attempt contact but without providing the internal training materials on this matter, it is reasonable to conclude that compliance is questionable.[21] In addition, the one instance of written training to field personnel that was provided is part of a Frequently Asked Questions document that includes one Question and Answer for field technicians who are conducting termination of service. The excerpt describes the potential situation in which the affected customer comes out of the house to claim payment has been made during the termination process and does not reflect any affirmative obligation to attempt personal contact or recognize the other rights mentioned in the regulation.[22] I attach Aqua Response to OCA-IX-21 and OCA-IX-22 (and attachment) as Exhibit BA-7.

Q. PLEASE DESCRIBE YOUR CONCERN WITH AQUA'S COMPLIANCE WITH THE RECONNECTION REQUIREMENTS OF CHAPTER 56.

[21] Aqua Response to OCA-IX-21.
[22] Aqua Response to OCA-IX-22.

A. The Commission's regulations govern restoration of service following termination for cause. These regulations require the public utility to document compliance with certain provisions, including:

> *§ 56.421. Payment and timing.*
>
> When service to a dwelling has been terminated, the public utility shall reconnect service within 24 hours after receiving one of the following:
>
> (7) Full payment of an outstanding charge plus the reconnection fee specified in the public utility's tariff on file with the Commission. Outstanding charges and the reconnection fee may be amortized over a reasonable period of time. Factors to be taken into account include, but are not limited to:
>
> (7) The size of the unpaid balance.
>
> (ii) The ability of the customer to pay.
>
> (iii) The payment history of the customer.
>
> (iv) The length of time over which the bill accumulated.
>
> (2) Payment of amounts currently due according to a payment agreement, plus a reasonable reconnection fee, which may be a part of the payment agreement. The public utility may apply the procedure in paragraph (1), if the payment history indicates that the customer has defaulted on at least two payment agreements, an informal complaint decision or a formal complaint order. For purposes of this section, neither an amortization of a make-up bill under § 56.264 (relating to previously unbilled public utility service) or the definition of ''billing month'' in § 56.252 (relating to definitions) nor a payment agreement that has been paid in full by the customer, are to be considered defaults. Budget billing plans and amortization of budget plan reconciliation amounts under § 56.262(8) (relating to meter reading; estimated billing; customer readings) may not be considered defaults for the purposes of this section.
>
> (3) Adequate assurances that any unauthorized use or practice will cease, plus full payment of the reasonable reconnection fee of the public utility, which may be subject to a payment agreement and compliance or adequate assurance of compliance with an applicable provision for the establishment of credit or the posting of deposits or guarantees.
>
> (4) Service shall be restored within 24 hours for erroneous terminations or upon receipt by the public utility of a valid medical certification. Erroneous terminations include instances when the grounds for termination were removed by the customer paying the amount needed to avoid termination prior to the termination of the service.
>
> (5) Service shall be restored within 24 hours for terminations and reconnections occurring after November 30 and before April 1.

> (6) A customer or applicant of a city natural gas distribution operation whose household income does not exceed 135% of the Federal poverty level shall be reinstated under this section only if the customer or applicant enrolls in the customer assistance program of the city natural gas distribution operation. This requirement may not apply if the financial benefits to the customer or applicant are greater if served outside of that assistance program.

> (7) A public utility shall provide for and inform the applicant or customer of a location where the customer may make payment to restore service. A public utility shall inform the applicant or customer that conditions for restoration of service may differ if someone in the household is a victim of domestic violence with a protection from abuse order or a court order issued by a court of competent jurisdiction in this Commonwealth which provides clear evidence of domestic violence, or is seriously ill or affected by a medical condition which will be aggravated without public utility service.

Q. WHAT IS YOUR CONCERN WITH AQUA'S COMPLIANCE WITH THESE PROVISIONS?

A. Aqua reported a significant difference between the terminations for nonpayment and the reconnections of service for those customers. When asked about the status of the approximately 5,000 residential Pennsylvania customers who were not identified as reconnected following termination for nonpayment in the last several years, the Company stated that "after a certain time," their customer information system treats customers who were terminated as a "move in" or a new customer account rather than a reconnection.[23] It is reasonable to question whether this response indicates a lack of ability to document compliance with the reconnection of service rights and remedies identified above. Aqua should respond to this concern with internal documentation of how customers who are seeking reconnection at the same location are provided with these rights and remedies.

Moreover, in the testimony submitted by Aqua in their Section 1329 acquisitions, Aqua has repeatedly emphasized that the acquired customers would benefit from the protections put in place under Chapter 14, 66 Pa. C.S. §§ 1401 et seq., that provide for

[23] Aqua Response to OCA-IX-27, following up on the prior response to OCA-I-9 that documented 14,101 disconnections of Pennsylvania residential water customers between January 2019 and September 2021 but only 8,973 reconnections of service.

billing, payment, collection, termination and reconnection of service, payment arrangements, medical certifications, and formal and informal complaint procedures.[24]

Q. DOES AQUA FOLLOW BEST PRACTICES IN IDENTIFYING CUSTOMER DISPUTES?

A. No. Aqua evidently does not affirmatively ask customers whether he/she is satisfied with the resolution of their contact with Aqua. Rather, Aqua appears to rely on a customer's indication that they are not satisfied with the resolution or explanation provided during the transaction.[25] This approach may significantly undercount the actual customer disputes because unless a customer is affirmatively informed that their "satisfaction" is crucial to the resolution of the transaction, customers who are speaking to a monopoly utility may not understand their rights and fail to express their views. Customers do not routinely know or have detailed knowledge of their rights and remedies. Aqua should affirmatively seek to determine whether a customer is satisfied.

Q. DOES AQUA PROMOTE PAYMENT METHODS ON ITS WEB PORTAL THAT REQUIRE THE CUSTOMER TO PAY A FEE TO A THIRD-PARTY VENDOR FOR CERTAIN PAYMENT METHODS?

A. Yes. Aqua's website and IVR conspicuously promote an option for a customer payment via credit/debit card or check.[26] In addition, Aqua's termination notices explicitly promote payment by this method with a separate toll-free number printed in bold that

[24] See, e.g. Mr. Packer's testimony in the East Norriton (Docket No. A-2019-3009052), pages 17-18.
[25] Aqua Response to OCA-IX-14. In addition, Aqua's training materials provided in response to OCA-I-2(5) do not reflect an obligation to affirmatively explore whether a customer is satisfied in call center transaction.
[26] https://www.aquaamerica.com/customer-service-center/ways-to-pay-your-water-bill.aspx

1 connects the customer to "Aqua's payment processing center."[27] However, this payment
2 option requires the customer to pay a $2.25 "processing fee." This fee is charged by
3 Aqua's third party vendor, Speedpay. As such, it is a fee that is within Aqua's control
4 due to its contract with Speedpay. Aqua's web portal also offers payment at a variety of
5 retail locations via Western Union for a fee that is not identified on its web portal. Aqua
6 received about 27,000 customer payments via Speedpay per month in 2021,[28] which
7 amounts to around $60,750 per month in processing fees.

8 Since Aqua promotes this payment method for an additional fee, Aqua has a
9 responsibility to consider the impact of this policy on those who are forced by their
10 personal circumstances to pay a bill (current or overdue) to avoid further collection
11 actions that may result in termination of service. I recommend that Aqua offer no-fee
12 payment options to its customers and include reasonable or necessary payment
13 processing fees in its revenue requirement, similar to the costs of handling payments via
14 mail. Such an approach is likely to generate a higher volume of customer payments and
15 could also reduce the costs of handling payments and checks via the U.S Mail system
16 which is notoriously slower than in the past. In fact, Pittsburgh Water and Sewer
17 Authority recently agreed to eliminate fees to make payments via their Interactive Voice
18 Response System and payments via their e-billing web portal.[29] In its most recent base

[27] Aqua Response to OCA-II-29 includes current versions of Aqua's termination notices. The first option listed under "to stop the shut off," is "Pay the total amount overdue. To pay by phone, call out toll free number at **866-269-2906** or see the back of the payment stub for all payment options." This telephone number is not the same as Aqua's customer call center number that is also provided to "let us know that you made a payment, to make a payment arrangement, or to dispute the overdue bill," listing **877-987-2782 (**select Collections**).** [Emphasis in original.] I called the 866 number on November 1, 2021 and was greeted with an announcement thanking me for calling "Aqua's payment processing center."
[28] Aqua Response to OCA-II-44.
[29] Joint Petition for Settlement, Docket Nos. R-2020-3017951 et al., Section G(2) (September 30, 2020). This settlement is referenced for the fact that another water/wastewater utility has eliminated the fees.

1 rate case, PWSA proposed to incentivize enrollment in its e-billing web portal with a
2 one-time $5 credit on the grounds that such enrollment would result in significant cost
3 savings associated with mailing bills and manually processing payments.[30] In a time of
4 significant impacts on lower and fixed income consumers because of COVID and loss of
5 employment, my recommendation could increase Aqua's ability to recover overdue bills
6 as well as ongoing payment of current bills.

7 Q. DO YOU HAVE A CONCERN ABOUT AQUA'S PRACTICE OF CHARGING LATE
8 FEES DURING THE COVID-19 PANDEMIC?

9 A. Yes. Aqua reports a significant level of late fee payments recovered from its customers
10 during the COVID-19 Pandemic. The volume of revenues from late fees indicates that
11 Aqua has been charging late fees even though terminations were halted during the
12 pandemic. According to Aqua's Response to OCA-III-1 (attachment), Aqua recorded
13 over $700,000 in late fees for the period April 2020 through March 2021. It is reasonable
14 to raise a concern about charging such late fees, particularly to lower income customers,
15 when termination was waived, and customers were informed of this change in collection
16 policy. When customers are informed of a halt to termination, most might assume that
17 they would not incur a penalty for the late payment or be at risk of building up a larger
18 overdue bill.
19

[30] Direct Testimony of Julie Quigley on behalf of PWSA, at 20, Docket Nos. R-2021-3024773 et al. (April 13, 2021). https://www.puc.pa.gov/pcdocs/1699960.pdf (page 1359 of the PDF).

VII. RECOMMENDATIONS FOR CUSTOMER SERVICE PERFORMANCE AS A CONDITION OF ANY RATE INCREASE SOUGHT BY AQUA

Q. BASED ON YOUR ANALYSIS OF AQUA'S COMPLIANCE WITH THE SERVICE QUALITY PERFORMANCE CONDITIONS IN THE AQUA-PEOPLES GAS MERGER, WHAT DO YOU RECOMMEND?

A. I do not think it useful to develop additional performance measures. Rather, Aqua should be held accountable for the previously agreed to performance standards. Aqua should develop and submit a compliance plan to the stakeholders that, after review, should be submitted to the Commission for approval and implementation. This compliance plan should include specific action steps and deadlines to achieve compliance. In addition, Aqua should be held accountable for the failure to comply with these provisions documented in my testimony with a critical view of Aqua's proposed Return on Equity. Considering my findings and those documented by Mr. Roger Colton on behalf of the OCA, there is sufficient justification to reject Aqua's claim of "exemplary" management as well as support for a consideration of an ROE that reflects the lower bound of reasonableness. My review of the customer service benefits identified by Aqua in its Section 1329 acquisition proceedings and the lack of any documentation of those customer service performance benefits in this rate case also supports this recommendation.

Q. WITH REGARD TO YOUR PRESENTATION OF ADDITIONAL SERVICE QUALITY AND CUSTOMER SERVICE PERFORMANCE, WHAT DO YOU RECOMMEND?

A. I propose the following conditions that should accompany any consideration of a rate increase and should be required within 60 days after a final order in this proceeding:

- Oversight of the Call Center compliance with Pennsylvania consumer protection rules and policies: Aqua should be required to develop and submit a plan that describes specific auditing and oversight policies applicable to its call centers with regular reporting on the results of such evaluations and audits.
- Termination of Service: Aqua should be required to develop specific training programs for its field personnel authorized to terminate service that explicitly includes the obligation to attempt personal contact with a responsible adult immediately prior to termination of service, as well as the recognition and response to the consumer protection rights associated with contact.
- Reconnection of service: In light of Aqua's policy that does not track "reconnection" obligations and rights after a certain time after termination for nonpayment, Aqua should be required to either revise its procedures and document compliance with restoration of service rights and remedies or describe how its current policies reflect these obligations.
- Identification of customer disputes: Aqua should adopt a policy that explicitly asks customers if he/she is satisfied with the response to an inquiry or concern to identify potential customer disputes.
- Third-party payment fees: Aqua should be required to explicitly consider the elimination of third party payment fees and evaluate the benefits and costs associated with eliminating fees to make payments on their IVR and e-billing web portal and

report to stakeholders.

- Aqua's charging late fees to customers during the COVID-19 Pandemic: Aqua should evaluate its communications to customers during the Pandemic and consider a policy of forgiveness of late fees imposed during the Pandemic, particularly lower income customers.

Q. DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?

A. Yes. However, I reserve the right to supplement this testimony for late filed discovery responses and revised testimony.

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Arkansas Attorney General
The Public Utility Project of New York
Ohio Office of Consumer Counsel
District of Columbia Office of People's Counsel
Delaware Division of Public Advocate
Maryland Office of People's Counsel

Areas of Expertise:

- Default Service, Consumer Protection, Service Quality, and Universal Service policies and programs associated with the alternative rate plans and mergers;
- Consumer Protection and Service Quality policies and programs associated with the regulation of competitive energy and telecommunications providers;
- The regulatory policies associated with the regulation of Credit, Collection, Consumer Protection, Low Income, and Service Quality programs and policies for public utilities;
- Customer Education and Rate design and pricing policies applicable to residential customers; and
- Advanced Metering Infrastructure and Grid Modernization costs and benefits, time-based pricing proposals, and performance standards.

Prior Employment

DIRECTOR

1986-96

Consumer Assistance Division
Maine Public Utilities Commission *Augusta, Maine*

One of five division directors appointed by a three-member regulatory commission and part of commission management team. Direct supervision of 10 employees, oversight of public utility consumer complaint function, appearance as an expert witness on customer services, consumer protection, service quality and low income policy issues before the PUC. Chair, NARUC Staff Subcommittee on Consumer Affairs.

SUPERINTENDENT

1979-83

Bureau of Consumer Credit Protection
Department of Professional and Financial Regulation *Augusta, Maine*

Director of an independent regulatory agency charged with the implementation of Maine Consumer Credit Code and Truth in Lending Act. Investigations and audits of financial institutions and retail creditors, enforcement activities, testimony before Maine Legislature and U.S. Congress.

Education

JURIS DOCTOR

1973-76

University of Maine School of Law *Portland, Maine*

Admitted to the Bar of the State of Maine, September 1976. Currently registered as "inactive."

B.A. (WITH DISTINCTION) IN POLITICAL SCIENCE 1964-68
University of Michigan *Ann Arbor, Michigan*

Publications and Testimony

"How to Construct a Service Quality Index in Performance-Based Ratemaking", The Electricity Journal, April, 1996

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Direct and Rebuttal Testimony on behalf of the Maryland Office of People's Counsel before the Maryland PSC, In The Competitive Selection of Electricity Supplier/Standard Offer or Default Service for Investor-Owned Utility Small Commercial Customers and, Delmarva Power and Light and Potomac Electric Power Residential Customers, Case No. 9064 (August and September 2006). [Default Service policies]

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Comments on behalf of AARP New Jersey before the New Jersey Board of Public Utilities, In the Matter of the Establishment of a Universal Service Fund Pursuant to Section 12 of the Electric Discount and Energy Competition Act of 1999, Docket No. EX00020091 (August 2006) [Recommendations for USF program changes]

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Direct Testimony on behalf of Pennsylvania Office of Consumer Advocate before the Pennsylvania PUC, Pennsylvania PUC v. Natural Fuel Gas Distribution Corp., Docket No. R-00061493 (September 2006) [Supplier Purchase of Receivables Program]

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Direct Testimony of Barbara Alexander before the Washington Utilities and Transportation Commission on behalf of the Public Counsel and The Energy Project, Washington UTC v. Avista Corp. d/b/a Avista Utilities, Dockets UE-160228 and UG-160229 (August 2016) [Base Rate Case and AMI Project analysis of costs and benefits]

Alexander, Barbara, *Analysis of Public Service Co. of Colorado's "Our Energy Future" Initiative: Consumer Concerns and Recommendations,* AARP White Paper (December 2016), attached to the Direct Testimony of Corey Skluzak on behalf of the Colorado Office of Consumer Counsel, Docket No. 16A-0588E (Exhibit CWS-35).

Direct Testimony of Barbara Alexander before the Public Utilities Commission of Ohio on behalf of the Office of Consumer Counsel, In the Matter of the Application of Ohio Power Co. for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143, in the Form of an Electric Security Plan, Case No. 16-1852-EL-SSO (May 2017) [Response to proposal for new surcharge for certain distribution grid investments]

Alexander, Barbara, Analysis and Evaluation of PEPCO's Root-Cause Analysis Report: District of Columbia Customer Satisfaction, prepared for the District of Columbia Office of People's Counsel and submitted to the D.C. Public Service Commission in Formal Case No. 1119 (May 2017)

Direct Testimony of Barbara Alexander before the Arkansas Public Service Commission on behalf of the Attorney General of Arkansas, Application of Entergy Arkansas, Inc. for an Order to find Advanced Metering Infrastructure to be in the Public Interest, Docket No. 16-06-U (June 2017) [Analysis of AMI business case; consumer protection policies]

Rebuttal Testimony of Barbara Alexander before the Pennsylvania Public Utilities Commission on behalf of the Office of Consumer Advocate, Pennsylvania PUC, et al., v. Philadelphia Gas Works, Docket No. R-2017-2586783 (June 2017) [Purchase of Receivables Program, customer shopping issues]

Direct and Surrebuttal Testimony of Barbara Alexander before the Maryland Public Service Commission on behalf of the Office of People's Counsel, In the Matter of the Application of Potomac Electric Power Co. for Adjustments to its Retail Rates for the Distribution of Electric Energy, Case No. 9443 (June and August 2017) [Service Quality and Reliability of Service]

Direct Testimony of Barbara Alexander before the Washington Utilities and Transportation Commission, on behalf of the Washington State Office of Attorney General, Public Counsel Unit, W.U.T.C. v. Puget Sound Energy, Dockets UE-170033 and UG_170034 (June 2017) [Base Rate Case: Service Quality Index; customer services]

Direct and Surrebuttal Testimony of Barbara Alexander before the Maryland Public Service Commission on behalf of the Office of Peoples Counsel, In the Matter of the Merger of AltaGas Ltd. And WGL Holdings, Inc., Case No. 9449 (August and September 2017) [Merger: conditions for service quality and reliability of service]

Supplemental Testimony in Opposition to Joint Stipulation and Recommendations of Barbara Alexander before the Public Utilities Commission of Ohio on behalf of the Office of Consumer Counsel, In the Matter of the Application of Ohio Power Co. for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143, in the Form of an Electric Security Plan, Case No. 16-1852-EL-SSO (October 11, 2017) [Response to Stipulation approving new surcharge for certain distribution grid investments]

Direct and Rebuttal Testimony of Barbara Alexander on behalf of The Public Utility Project of New York, before the New York Public Service Commission, Case 15-M-0127 In the Matter of Eligibility Criteria for Energy Service Companies, Case 12-M-0476 Proceeding on Motion of the Commission to Assess Certain Aspects of the Residential and Small Non-residential Retail Energy Markets in New York State, and Case 98-M-1343 In the Matter of Retail Access Business Rules (November and December 2017) [Analysis of New York retail energy market for residential customers; recommendations for reform]

Comments of Barbara Alexander before the Delaware Public Service Commission, on behalf of the Delaware Division f the Public Advocate, In the Matter of the Review of Customer Choice in the State of Delaware, Docket No. 15-1693 (December 22, 2017) [Proposals for retail market enhancement programs]

Alexander, Barbara, Analysis and Evaluation of PEPCO's Supplemental Root-Cause Analysis Report: District of Columbia Customer Satisfaction prepared for the District of Columbia Office of People's Counsel and submitted to the D.C. Public Service Commission in Formal Case No. 1119 (January 2018)

Direct, Rebuttal, and Surrebuttal Testimony of Barbara Alexander on behalf of the Office of Consumer Advocate, before the Pennsylvania Utility Commission, Joint Petition of Metropolitan Edison Company Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company For Approval of their Default Service Program and Procurement Plan for the Period June 1, 2019 Through May 31, 2023, Docket Nos. P-2017-2637855, et seq. (February, March, and April 2018) [Retail Market Enhancement Programs in a default service proceeding]

Direct Testimony of Barbara Alexander on behalf of the Arizona Corporation Commission Staff, before the Arizona Corporation Commission, In the Matter of the Application of Brooke Water, LCC for increase in water rates, Docket No. W-03039A-17-0295 (May 15, 2018) [Analysis of customer service, call center performance, and compliance with prior Commission orders]

Alexander, Barbara, "Residential Demand Charges: A Consumer Perspective," EUCI Conference, Nashville, TN (May 2018)

Direct Testimony of Barbara Alexander in Opposition to the Joint Stipulation and Recommendation on behalf of the Office of the Ohio Consumers' Counsel, before the Public Utility Commission of Ohio, Case No. 17-0032-EL-AIR et seq. (June 15, 2018) [Analysis of the prudence of Duke Energy Ohio's Advanced Metering Infrastructure Deployment and request for inclusion of costs in rate base]

Alexander, Barbara, "Time to End the Retail Energy Market Experiment for Residential Customers," Harvard Electricity Policy Group (June 2018)

Rebuttal Testimony of Barbara Alexander on behalf of the Office of Consumer Advocate, before the Pennsylvania Public Utility Commission, PUC v. Columbia Gas of Pennsylvania, Inc., Docket No. R-2018-2647577 (July 3, 2018) [Analysis of gas utility billing policies for non-commodity services and retail natural gas suppliers]

Direct Testimony of Barbara Alexander on behalf of TURN and Center for Accessible Technology before the California Public Utility Commission, 2018 Rate Design Window, Docket No. A.17-12-011, et al. (October 26, 2018) [Consumer Protections to Accompany the Transition to Default Time of Use Rates for residential customers; analysis of customer education and messaging]

Direct and Surrebuttal Testimony of Barbara Alexander on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Utility Commission, PUC vs. Pittsburgh Water and Sewer Authority, Docket Nos. R-2018-3002645, R-2018-3002647 (September and October 2018) [Analysis of compliance with Pennsylvania consumer protection and service quality performance of a large water and sewer utility; base rate case]

Direct Testimony of Barbara Alexander on behalf of TURN before the California Public Utility Commission, Southern California Edison Charge Ready 2 Infrastructure and Market Education Programs, Docket No. A.18-06-015 (November 30, 2018) [Analysis of proposed mass market customer education proposal]

Direct, Surrebuttal and Supplemental Surrebuttal Testimony of Barbara Alexander on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Implementation of Chapter 32 of The Public Utility Code Regarding Pittsburgh Water and Sewer Authority – Stage 1, Docket Nos. M-2018-2640802 and M-2018-2640803 (April, May and August 2019) [Analysis of consumer protection, customer service, and customer education programs of large water and wastewater utility]

Direct, Rebuttal, and Surrebuttal Testimony of Barbara Alexander on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Application of Aqua America, Inc., Aqua Pennsylvania, Inc., Aqua Pennsylvania Wastewater, Inc., Peoples Natural Gas Company, LLC and Peoples Gas Company, LLC for all of the Authority and the Necessary Certificates of Public Convenience to Approve a Change in Control of Peoples Natural Gas Company, LLC and Peoples Gas Company LLC by Way of the Purchase of All of LDC Funding, LLC's Membership Interests by Aqua America, Inc., Docket Nos. A-2018-3006061, A-2018-3006062, and A-2018-3006063 (April and May 2019) [Customer Service, Consumer Protection, and Universal Service conditions for merger]

Testimony in Opposition to Settlement on behalf of The Office of the Ohio Consumers' Council, before the Ohio Public Utilities Commission, In the Matter of the Commission's Investigation of PALMco Power OH, LLC dba Indra Energy and PALMco Energy OH, LLC dba Indra Energy, Case No. 19-957-GE-COI (September 4, 2019) [Analysis of proposed settlement for consumer protections and customer remedies]

Testimony in Opposition to Settlement on behalf of The Office of the Ohio Consumers' Council, before the Ohio Public Utilities Commission, In the Matter of the Commission's Investigation of Verde Energy USA Ohio LLC, Case No. 19-0958-GE-COI (October 2, 2019) [Analysis of proposed settlement for consumer protections and customer remedies]

Direct Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Joint Petition of Metropolitan Edison Co., Pennsylvania Electric Co., Pennsylvania Power Co. and West Penn Power Co. for Approval of Their Involuntary Remote Disconnect Procedures, Docket No. P-2019-3013979 et al. (March 20, 2020) [Criteria for remote disconnection of service with AMI]

Rebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Interstate Gas Supply, Inc., Direct Energy Services LLC and Shipley Choice LLC v. Metropolitan Edison Co., Pennsylvania Electric Col, Pennsylvania Power Col, West Penn Power Co., Docket Nos. C-2019-30138-5 et al. (May 2020) [Complaint by retail suppliers seeking to bill non-basic services on utility bill]

Alexander, Barbara, "An Evaluation of Arizona Public Service Company's Customer Education Plan and its Implementation," prepared on behalf of the Staff of the Arizona Corporation Commission, Docket Nos. E-01345A-19-0236 and E-01345A-19-0003 (May 15, 2020)

Direct and Supplemental Testimony, Rebuttal Testimony, and Surrebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Petition of PPL Electric Utilities Corporation for Approval of a Default Service Program for the Period of June 1, 2021 through May 31, 2025, Docket No. P-2020-3019356 (June-August 2020) [Standard Offer Program and low income shopping program for retail market programs]

Direct, Rebuttal, and Surrebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Petition of PECO Energy for Approval of Default Service Program for the Period June 1, 2021 through May 31, 2025, Docket No. P-2020-3019290 (June-July 2020),) [Standard Offer Program and low income shopping program for retail market programs]

Direct, Rebuttal, and Surrebuttal Testimony, on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Petition of Duquesne Light Co. for Approval of Default Service Program for the Period June 1, 2021 through May 31, 2025, Docket No. P-2020-3019522 (July-September 2020), [Standard Offer Program and low income shopping program for retail market programs]

Direct and Surrebuttal Testimony, on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Pennsylvania Public Utility Commission v. Pittsburgh Water and Sewer Authority, Docket Nos. R-2020-3017951 (water), C-2020-3019348, R-2020-3017970 (wastewater), C-2020-3019349 (July-September 2020) [Base rate case; analysis of customer service and consumer protection programs and policies]

Affidavit of Barbara R. Alexander, Analysis of Washington Gas Light Co. Root Cause Analysis Report, on behalf of the Office of the People's Counsel of the District of Columbia, submitted to the Public Service Commission in Formal Case No. 1142 (October 2020).

Direct and Surrebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Pennsylvania Public Utility Commission v. Pennsylvania American Water Co, Docket R-2020-3019369, et al., (September-October 2020) [Base rate case; analysis of customer service and consumer protection programs and policies]

Direct and Surrebuttal Testimony, on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Pennsylvania Public Utility Commission v. Pittsburgh Water and Sewer Authority, Docket Nos. R-2021-3024773, et al. (July-September 2021) [Base rate case; analysis of customer service and consumer protection programs and policies]

Presentations and Training Programs:

- Presentation on Consumer Protection Policies for Solar Providers, New Mexico Public Regulatory Commission, Santa Fe, NM, January 2017
- Presentation on Residential Rate Design Policies, National Energy Affordability and Energy Conference, Denver, CO., June 2016
- Presentation on "Regulatory-Market Arbitrage: From Rate Base to Market and Back Again," before the Harvard Electricity Policy Group, Washington, D.C., March 2016.
- Presentation on Residential Rate Design and Demand Charges, NASUCA, November 2015.
- Alexander, Barbara, "Residential Demand Charges: A Consumer Perspective," presentation for Harvard Electricity Policy Group, Washington, D.C., June 2015.
- Presentation on "Future Utility Models: A Consumer Perspective," for Kleinman Center for Energy Policy, U. of Pennsylvania, August 2015.
- Presentation, EUCI Workshop on Demand Rates for Residential Customers, Denver, CO [May 2015]
- Presentation, Smart Grid Future, Brookings Institute, Washington, DC [July 2010]
- Participant, Fair Pricing Conference, Rutgers Business School, New Jersey [April 2010]
- Presentation on Smart Metering, National Regulatory Conference, Williamsburg, VA [May 2010]
- Presentation on Smart Metering, Energy Bar Association Annual Meeting, Washington, DC [November 2009]
- Presentation at Workshop on Smart Grid policies, California PUC [July 2009]
- National Energy Affordability and Energy Conference (NEAUC) Annual Conference
- NARUC annual and regional meetings
- NASUCA annual and regional meetings
- National Community Action Foundation's Annual Energy and Community Economic Development Partnerships Conference
- Testimony and Presentations to State Legislatures: Virginia, New Jersey, Texas, Kentucky, Illinois, and Maine
- Training Programs for State Regulatory Commissions: Pennsylvania, Georgia, Kentucky, Illinois, New Jersey
- DOE-NARUC National Electricity Forum
- AIC Conference on Reliability of Electric Service
- Institute of Public Utilities, MSU (Camp NARUC) [Instructor 1996-2006]
- Training Programs on customer service and service quality regulation for international regulators (India and Brazil) on behalf of Regulatory Assistance Project
- Georgia Natural Gas Deregulation Task Force [December 2001]
- Mid Atlantic Assoc. of Regulatory Utility Commissioners [July 2003]
- Illinois Commerce Commission's Post 2006 Initiative [April 2004]
- Delaware Public Service Commission's Workshop on Standard Offer Service [August 2004]

Witness: Georgetta Parisi
Date: 10/6/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET I

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-I-1: For each water utility and wastewater utility owned and/or operated by Aqua America in Pennsylvania, please provide the following monthly and annual average information in an Excel spreadsheet with any formulas intact for the calendar years 2019 through the most recent month for which data is available in 2021 (NOTE: Where available, distinguish customer class for results requested):

a) Call Center Performance: calls received; calls answered by a customer service representative; percentage of calls answered within 30 seconds by a customer service representative; average speed of answer for call answered by a customer service representative, busy out rate; abandonment rate.

b) Customer disputes: number received, and number answered; number of disputes answered in more than 30 days

c) Billing: estimated bills; percentage of meters not read within 6 months and within 12 months; number and percentage of bills not rendered on time

d) Outages: number of outages and customers affected not caused by scheduled maintenance

e) Appointments for repair and installation of service: number and percentage missed not due to customer actions

f) Installation of service: number of new service installations and average days to install.

g) Customer Satisfaction: survey instruments and survey results

RESPONSE:

a. See attachment OCA-I-1(a) for call center performance information. The information includes calls for all Aqua states as Aqua does not segment the information by individual state.

b. See attachment OCA-I-1(b) for customer dispute data.

c. See attachment OCA-I-1(c) for billing data.

d. See attachment OCA-I-1(d) for outage data

e. See attachment OCA-I-1(e) for appointment data. The Company does not have the percentage of appointments missed not due to customer actions.

f. See attachment OCA-I-1(f) for installation of service data.

g. See attachment OCA-I-1(g) for customer survey data

OCA-I-1(a) - Attachment

2019

Call Center Performance	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	
Total Calls Received	204,083	175,025	183,733	184,379	194,621	188,987	205,829	201,247	192,509	211,395	178,430	179,859	191675
Calls Offered to CSR	96,572	80,181	83,699	89,114	94,185	91,246	100,623	99,000	93,434	96,796	84,774	81,006	90886
Calls Answered by CSR	92,731	79,190	80,441	85,568	86,997	84,718	93,390	95,476	88,675	95,611	80,302	77,371	86706
CSR Percentage of Calls Answered in 30 Seconds by CSR	71.90%	88.64%	74.94%	73.41%	60.48%	63.94%	61.32%	69.96%	60.93%	88.57%	61.63%	71.06%	70.56%
Aggregate Percentage of Calls Answered in 30 Seconds by CSR	82.70%	91.63%	85.43%	84.19%	77.59%	80.37%	78.80%	83.10%	78.44%	92.21%	79.71%	84.94%	83.26%
Avg. Speed of Call Answer by CSR	:51	:16	:47	:50	1:37	1:29	1:34	:38	1:08	:14	1:05	:54	
Busy Out Rate													
CSR Abandonment Rate	3.98%	1.24%	3.89%	3.98%	7.63%	7.15%	7.19%	3.56%	5.09%	1.22%	5.28%	4.49%	4.56%
Aggregate Abandonment Rate	6.55%	4.30%	5.50%	5.51%	7.53%	6.85%	6.61%	4.94%	6.00%	3.71%	5.81%	5.07%	5.70%

OCA-I-1(a) - Attachment

2020

Call Center Performance	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	
Total Calls Received	192,752	167,085	155,720	148,790	145,511	152,113	161,758	163,291	165,359	168,574	178,175	208,622	167,313
Calls Offered to CSR	90,976	76,843	70,100	61,940	57,445	64,551	71,724	72,024	76,903	77,622	78,130	94,166	74,369
Calls Answered by CSR	86,666	74,752	67,826	59,771	56,019	63,851	69,636	68,908	73,259	75,710	70,718	84,670	70,982
CSR Percentage of Calls Answered in 30 Seconds by CSR	71.55%	73.87%	76.99%	76.33%	85.12%	89.11%	74.81%	67.18%	65.98%	79.72%	52.47%	61.13%	72.86%
Aggregate Percentage of Calls Answered in 30 Seconds by CSR	83.97%	85.78%	87.36%	86.65%	90.06%	92.57%	86.70%	82.16%	80.88%	87.15%	71.22%	79.30%	84.48%
Avg. Speed of Call Answer by CSR	:56	:33	:38	:45	:30	:16	:39	1:02	1:09	:31	2:23	2:24	
Busy Out Rate													
CSR Abandonment Rate	4.74%	2.72%	3.24%	3.50%	2.48%	1.08%	2.91%	4.33%	4.74%	2.46%	9.49%	10.08%	4.32%
Aggregate Abandonment Rate	5.60%	4.35%	4.57%	5.71%	5.76%	4.01%	5.87%	5.92%	6.22%	6.13%	13.59%	10.62%	6.53%

OCA-I-1(a) - Attachment

Call Center Performance	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	2021
Total Calls Received	256,140	228,109	220,816	166,891	171,567	178,737	186,179	201,206
Calls Offered to CSR	115,506	105,280	102,998	76,923	80,419	85,807	87,389	93,475
Calls Answered by CSR	90,807	79,053	84,382	74,307	72,088	77,823	83,380	80,263
CSR Percentage of Calls Answered in 30 Seconds by CSR	27.30%	48.24%	40.22%	78.15%	47.06%	45.84%	67.68%	50.64%
Aggregate Percentage of Calls Answered in 30 Seconds by CSR	68.26%	78.75%	75.69%	90.73%	78.82%	78.11%	87.20%	79.65%
Avg. Speed of Call Answer by CSR	6:21	6:35	5:13	:55	3:04	2:40	1:07	
Busy Out Rate								
CSR Abandonment Rate	21.38%	24.91%	18.07%	3.40%	10.36%	9.30%	4.59%	13.15%
Aggregate Abandonment Rate	9.64%	11.50%	8.43%	1.57%	4.86%	4.47%	2.15%	6.09%

Witness: Georgetta Parisi-Knup
Date: October 27, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IX

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IX-30: With regard to the response to OCA-I-11, what is the status of the root cause analysis required by Settlement Para. 57? Please provide the plan and methodology that will be used to conduct this analysis and describe why this has not yet been accomplished.

RESPONSE: The Company is continuing its work on the live Excel spreadsheet to track Aqua PA's customer complaints. See response to OCA-VIII-18 for information for customer complaints regarding quality of service issues.

See electronic attachment OCA-IX-30 for a live Excel spreadsheet for customer complaints filed with the Commission's Bureau of Consumer Services.

Witness: Georgetta Parisi-Knup
Date: October 27, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IX

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IX-35: Has Aqua PA received notice of "unjustified" complaints and "verified infractions" from the Commission Staff since January 2019? If so, provide the communications from the Commission Staff and Aqua PA's analysis and response.

RESPONSE: Aqua receives notices of verified infractions. Each case received is accepted or contested. For details of each infraction, see Confidential attachment OCA-IX-35.

Below is also summary for each year:

2019
Accepted: 30
Contested: 6 (none reversed)
Total: 36

2020
Accepted: 21
Contested: 6 (none reversed)
Total: 27

2021
Accepted: 13
Contested: 9 (5 reversed)
Total: 22

Witness: Georgetta Parisi-Knup
Date: October 27, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IX

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IX-31: With regard to the response to OCA-I-11 and the requirement of Settlement Para. 58, provide the actual performance data for each month since January 2020.

RESPONSE: See chart below

				Average Response Time (days)									
Complaints	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
2020	21	18	19	14	16	6	13	10	10	7	13	9	15
2021	13	14	17	14	13	12	20	13	10	6			13

Witness: Georgetta Parisi-Knup
Date: October 27, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IX

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IX-36: How does Aqua PA determine that its call center staffing complies with Pennsylvania regulations governing water and wastewater service? Please describe the process to conduct oversight for compliance and any results of such evaluations since January 2019.

RESPONSE: Call center training for staff is ongoing and CSRs are trained on the PA regulations. In addition to initial training, calls are monitored and individual CSRs are reviewed and coached on an ongoing basis. For specific regulations, many compliance related matters are built into the billing system (ex. billing cycle, collection notices and process). Aqua PA monitors and participates in PUC proceedings where regulations may be updated or changed that could impact the call center and this information is relayed and training is performed as necessary. In addition, Aqua customer service staff are in communication with PUC BCS staff and have an open communication if a particular rule or regulation may be interpreted differently.

Witness: Georgetta Parisi-Knup
Date: October 27, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IX

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IX-21: Is it correct to interpret the response to OCA-I-6 that Aqua PA does not attempt to contact an adult occupant of the residence by knocking on the door immediately prior to shutting off service? Please explain the basis for this omission.

RESPONSE: Aqua PA representatives are instructed to attempt to contact an adult occupant of the residence prior to shutting off service as required by the PUC regulations.

Witness: Georgetta Parisi-Knup
Date: October 27, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IX

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IX-22: What instructions and training are given to field representatives who encounter the customer or other responsible adult at the premises prior to disconnection of service?

RESPONSE: See attachment OCA-IX-22.

FAQs: Common Problems in the Field

- **Q: I received a SO that is not in my usual work area. What should I do?**
  - Before driving to the location and working the SO, call the supervisor/coordinator to clarify if the SO was dispatched correctly.

- **Q: I am working a HIC SO and the leak indicator is not spinning. There aren't any obvious reasons why the bill was high, and the customer is still insisting that the meter is wrong, or that Aqua is just trying to rob them of their money. What can I do?**
  - Refer to the "Meter tests – myths or facts" page in this book for suggestions on how to communicate to the customer .
  - Refer the customer to the Aqua website for tips on reducing water usage, checking for leaks, or recalling high-usage patterns (e.g. relatives visiting/children home from college).
  - You can offer to test the meter, but remember to inform them that meters have never been the reason for a sudden increase in usage (again refer to "Meter tests – myths or facts" page in this book).

- **Q: I am arriving on site to work a SONP (Shut Off for Non Payment) service order when the customer runs out saying they have or are in the process of paying the bill. What should I do?**
  - Ask for a valid confirmation number.
  - If they have already paid and they provide you with the number, suspend the Service Order (your supervisor or billing department will re-dispatch if the customer provided a false number).
  - If they are in the process of paying when you arrive, work other service orders in the area and tell them that you will be back.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	Docket Nos. R-2021-3027385 (Water)
	v.	:	C-2021-3028466 (Water)
		:	R-2021-3027386 (WW)
	Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
	Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Barbara R. Alexander, hereby state that the facts set forth in my Direct Testimony, OCA Statement 6, 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: November 10, 2021 Signature: Barbara R. Alexander
*319613 Barbara R. Alexander

Consultant Address: Barbara Alexander Consulting, LLC
83 Wedgewood Drive
Winthrop, Maine 04364

OCA Statement 7

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
	:	Docket No. R-2021-3027385
v.	:	
	:	Docket No. R-2021-3027386
AQUA PA PENNSYLVANIA, INC. WATER AND WASTEWATER	:	

DIRECT TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

November 10, 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. DID YOU PROVIDED TESTIMONY IN THE 2018 AQUA WATER AND SEWER (AQUA) RATE CASES?

A. Yes.

Q. WHAT ISSUES HAVE YOU BEEN ASKED TO INVESTIGATE REGARDING THE AQUA RATE CASES?

A. The OCA requested that I investigate quality of service related to Aqua's water and wastewater.

Q. WHAT DID YOUR INVESTIGATION CONSIST OF?

A. In addition to reviewing portions of the last base rate case, my investigation included: (1) reviewing portions of Aqua's filing applicable to Quality of Service; (2)

reviewing informal and formal complaints filed by Aqua customers with the PUC; (3) reviewing customer complaints received by Aqua and OCA; (4) reviewing applicable portions of the Direct Testimony of Aqua witnesses William C. Packer, Aqua Statement. No. 1; Paul R. Moul, Aqua Statement No. 7; and Todd M. Duerr, Aqua Statement No. 9; and (5) reviewing Aqua's responses to the OCA's Interrogatories regarding quality of service issues. Six Public Input Hearings are scheduled for November 8, November 9, November 10, and November 12, 2021, after my direct testimony will be finalized.

I reserve the right to supplement this testimony after reviewing any relevant portions of additional transcripts of the Public Input Hearings when they become available.

WATER SYSTEM

Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF THE AQUA'S WATER SYSTEM.

A. At December 31, 2020, Aqua provided water service to approximately 445,000 customers in five counties near Philadelphia and 24 additional counties in the northwestern, central and Pocono Mountain regions of Pennsylvania[1] and produced 113.32 million gallons (MG) of water during 2020.[2] Its service areas contain over 5,800 miles of distribution system pipe across 114 distribution systems, 202 distribution storage tanks containing 203.13 MG of usable storage,

[1] Aqua Statement No. 7 at 4
[2] Aqua's response to OCA-VIII-6

83,547 isolation valves, over 24,000 fire hydrants, 13 water treatment plants, and numerous wells and treatment facilities.[3]

QUALITY OF SERVICE ISSUES - WATER SYSTEM

Q. WHAT QUALITY OF SERVICE ISSUES ARE INCLUDED IN YOUR TESTIMONY CONCERNING THE AUTHORITY'S WATER SYSTEM?

A. In this section, I address (1) unaccounted for water (UFW); (2) pressure surveys; (3) maintenance of isolation valves; (4) fire hydrants; (5) flushing the distribution system; and (6) customer complaints.

UNACCOUNTED FOR WATER

Q. WHAT IS MEANT BY THE TERM "UNACCOUNTED FOR WATER"?

A. There are several different procedures for calculating Unaccounted for Water (UFW). 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".

Q. WHY IS UFW IMPORTANT?

[3] Aqua's responses to OCA-VIII-19, OCA-VIII-8 (Highly Confidential), OCA-VIII-6, OCA-VIII-9, OCA-VIII-15 and OCA-VIII-21. My testimony references aggregate data from OCA-VIII-8 and does not disclose confidential information from that response.

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 AQUA PROVIDED INFORMATION ON UFW?

A. Yes. In response to OCA-VIII-3, Aqua submitted AWWA Water Audits for six Divisions. I have attached some pertinent summary information from these six audits in Exhibit TLF-1W (excerpt from OCA-VIII-3).

Q. DID AQUA SUBMIT AN UFW CALCULATION FOR EACH SYSTEM BY THE PUC 500 METHOD AS REQUESTED BY OCA-VIII-3?

A. No.

Q. DID AQUA SUBMIT AN UFW CALCULATION BY THE PUC SECTION 500 METHOD FOR A TOTAL OF ALL ITS SYSTEMS?

A. Not in response to OCA-VIII-3; but a copy was obtained from Aqua's 2020 Annual Report submitted to the PUC. See Exhibit TLF-2W.

Q. HOW DOES THE UFW INFORMATION SHOWN IN THE 2020 ANNUAL REPORT COMPARE WITH THE AWWA AUDIT INFORMATION SUBMITTED IN RESPONSE TO OCA-VIII-3?

A. The amount of water supplied to the distribution system shown on Section 500 of the Annual Report is 1,327.76 MG less than shown on the AWWA Audit totals. Also, the amount of water sold on Section 500 is 258.59 MG less than the AWWA Audit totals. See Exhibit TLF-3W.

Q. DO YOU HAVE ANY COMMENTS ON THE UFW INFORMATION PROVIDED BY AQUA?

A. Yes. The amount of water supplied to the distribution system varies by over 3% between PUC Section 500 and the AWWA audits. This is more than a rounding error for information based on the same data.

Q. WHAT DO YOU RECOMMEND?

A. I recommend that in future rate cases Aqua be required to submit a Section 500 UFW calculation for each of its water systems and that the information submitted should be based on the same data that is required for AWWA Audits and the annual Chapter 110 Reports that are submitted to DEP.

Q. HAS ANY PENNSYLVANIA WATER COMPANY WITH MULTIPLE SYSTEMS AGREED TO SUBMIT SECTION 500 CALCULATIONS FOR EACH SYSTEM BASED ON THE SAME DATA USED FOR DEP CHAPTER 110 REPORTS?

A. Yes. Pennsylvania-American Water Company agreed to do so as part of the settlement of its 2017 Base Rate Case[4] and did so in its submission of its 2020 Base Rate Case filing[5].

PRESSURES AND PRESSURE SURVEYS

Q. WHAT ARE THE PUC'S REQUIREMENTS FOR PRESSURES AND PRESSURE SURVEYS?

A. According to 52 Pa. Code § 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 engineering practices. The authority of the Commission to require service improvements incorporating standards other than those set forth in this subsection

[4] Docket No. R-2017-2595853
[5] Docket No. R-2020-3019369

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 employees 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 DEP'S 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.[6]

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 distribution system 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. HAS AQUA PROVIDED INFORMATION ON SYSTEM PRESSURES?

[6] Public Water Supply Manual, Part II, Community System Design Standards, May 6, 2006, p. 186-187

A. Yes. Aqua addressed pressures in Filing Requirement QS.2, and in responses to OCA-VIII-15 & 16. See Exhibit TLF-4W.

In Aqua's response to Filing Requirement QS.2, Aqua states that (1) it believes that it is compliance with 52 Pa. Code § 65.6(a) and 52 Pa. Code § 65.6(d) and (2) in an effort to proactively address potential pressure problems, the Company has installed pressure gauges, replaced aged waterlines, modified well and pump station outputs and storage tank alternatives, installed flow control valves at booster stations to regulate and stabilize flow, installed new boundary valves, modified boundary limits of existing pressure zones, and created new pressure zones at higher elevation areas.

In Aqua's response to OCA-VIII-15, it states that in order to comply with 52 Pa. Code § 65.6(d): (1) it records pressures on over 24,000 hydrants; (2) investigates pressures that are out of the ordinary (3) the Southeastern Pennsylvania (SEPA) and the majority of the Greater Pennsylvania systems (Northeast, Central & Western Pennsylvania divisions) are connected to its Supervisory Control and Data Acquisition (SCADA) system that is continually monitored; (4) those systems not connected to SCADA in the Greater Pennsylvania systems are recorded with chart recorders; and (5) Hydrant and SCADA data for the past three years are very voluminous.

In Aqua's response to OCA-VIII-16, it states that: (1) instead of maintaining a list of customer locations that have a normal pressure with less than 25 psi or greater than 125 psi, it monitors pressures at sources and addresses low- or high-pressures reports from customers as they occur; (2) Aqua has a long history of

hydrant pressure readings in the large, contiguous systems in southeast PA; (3) hydraulic computer models are available to estimate pressures for some, but not all, of the other systems; and (4) maps of SEPA showing pressures are included in "Highly Confidential OCA-VIII-16 – Attachment 1".

Q. HAS AQUA SATISFIED THE REQUIREMENTS OF 52 Pa. CODE § 65.6(d)?

A. No. Aqua has approximately 114 water systems, many of which have more than one pressure zone. The distribution system in each pressure zone will have two representative points - a high pressure point usually located at a low ground elevation and a low pressure point usually located at high ground elevation. Therefore, a satisfactory pressure survey can consist of only two pressures for each pressure zone taken at the two representative points. The last revision of 52 Pa. Code § 65.6 occurred in 1983 prior to hydraulic computer models of water systems being common. For purposes of evaluating utility system pressures, I have generally accepted pressure information obtained from hydraulic computer models and SCADA systems, when available, assuming that a complete complaint log is also provided that includes all customer pressure complaints. The complaint log will indicate if the pressure complaints are due to correctable Company or customer facilities or that the hydraulic computer model or SCADA system needs to be modified. In Aqua's SEPA division, the distribution system has 120 operating pressure zones[7] for which Aqua has SCADA data and a long history of hydrant pressure readings. Therefore, the low and high pressures for the two

[7] Aqua's response to OCA-VIII-13

representative points within each of these zones should be easily estimated. In its next base rate case, I recommend that Aqua submit pressure survey pressure information for its systems from computer models or SCADA systems where available or ("at two representative points") for each pressure zone if a computer model or SCADA system is not available. Submitting pressures at "the two representative points" for all of its pressure zones would also be acceptable.

Q. HAVE YOU REVIEWED THE ATTACHMENT 1 TO OCA-VIII-16 (MARKED AS HIGHLY CONFIDENTIAL)?

A. Yes.[8]

Q. DID THE ATTACHMENT INCLUDE MAPS THAT SHOW AREAS WITH AVERAGE PRESSURES LESS THAN 25 PSI AND AREAS WITH AVERAGE PRESSURES GREATER THAN 125 PSI FOR VARIOUS WATER SYSTEMS?

A. Yes. This Attachment contains maps that show average pressures (marked as below 25 psi, between 25 to 125 psi, and over 125 psi) for the following systems: Chalfont, Clarendon, Crawford, Emlenton, Fawn Lake, Flying Hills, Honesdale, Jenks Township, Lake Latonka, Mt. Jewett, Perkiomen Township, Roaring Creek, Shenango, Superior, Treasure Lake, Waymart and SEPA. Most of those systems showed few, if any, pressures that were not between 25 and 125 psi. However, I noticed a few areas exceeding 125 psi in the Roaring Creek, Shenango and

[8] My discussion is based on aggregate data and does not disclose confidential information from that attachment.

Waymart systems and roughly 20% of the SEPA system has pressures exceeding 125 psi. A very few areas had pressures less than 25 psi.

Q. HAS AQUA PROVIDED A COMPLETE CUSTOMER COMPLAINT LOG THAT SHOWS CUSTOMER COMPLAINTS REGARDING PRESSURES?

A. The Water Complaint Log provided by the Company did not include "pressure" as a main searchable category but included it in its discussions of other complaints included the main categories. Complaints about pressure should be recorded and included in a separate category of the log to make it easier to identify and review this common type of complaint. In its next base rate case, I recommend that Aqua submit a complete complaint log that addresses all pressure complaints and notes which complaints were in response to pressures. I make additional recommendations for the complaint log later in my testimony.

Q. HAS AQUA COMPLETED ANY RECENT PROJECTS THAT HAVE REDUCED THE NUMBER OF CUSTOMERS RECEIVING SERVICE AT PRESSURES THAT ARE LOWER THAN 25 PSI OR ABOVE 125 PSI?

A. In Filing Requirement QS.2 discussed above, Aqua referred to steps they have taken to comply with 52 Pa. Code § 65.6; but have not indicated which, if any, of those projects are recent. Aqua has provided information that during 2019 in the SEPA District, a pressure reducing valve was moved that improved pressures to eighteen customers on West Woodlawn Avenue and two customers on James

Lane. According to Aqua, this project also provided better fire service to 225 customers.

In the Greater PA areas, Aqua stated that it has improved pressures to four customers in DuBois Township.

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING HIGH PRESSURES?

A. Yes. Aqua should be responsible for all damages to customer facilities where the normal operating pressures exceeds 125 psi unless it installs a pressure reducing valve (PRV) approved for water supply with the applicable pressure upstream of the customer's service line.

Aqua should reduce normal operating pressures exceeding 125 psi in its mains in order to protect customer service lines and inside plumbing if the customer's pressure reducing valve fails.

ISOLATION VALVES

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. WHAT ARE DEP'S RECOMMENDATIONS REGARDING ISOLATION VALVES?

A. The valves should be located at not more than 500 foot intervals in commercial districts and at not more than one block or 800 foot intervals in other areas of the distribution system. See Exhibit TLF-5W.

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. 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. Because isolation valves are generally in pavement, they can be 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. 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.[9]

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."[10]

Q. WHAT INFORMATION DID AQUA PROVIDE REGARDING EXERCISING ISOLATION VALVES?

A. In response to OCA-VIII-9, Aqua provided the following information on isolation valves: (1) Aqua does not keep records of the location of isolation valves that have not been exercised in the past five years; (2) the number of isolation valves that were replaced during 2017 through October 15, 2021; (3) approximately 6,000 to 8,000 were exercised in 2020; (4) 222 isolation valves were repaired during 2020 and October 13, 2021; (5) Aqua exercises 270 critical valves no less than once

[9] Tech Brief, Valve Exercising, 2007, Vol. 7, Issue 2, The National Environmental Services Center of West Virginia University, Morgantown, WV. https://www.nesc.wvu.edu/files/d/1f62b334-8497-403e-bceb-f5116ac2c142/valve-exercising.pdf

[10] American Water Works Association. 1996. Manual of Water Supply Practices, Denver: AWWA

every four years; and (5) there are a total of 83,547 isolation valves in all its systems. See Exhibit TLF-6W.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING AQUA'S MAINTAINANCE OF ISOLATION VALVES?

A. Because Aqua has a responsibility to properly maintain all its equipment, I recommend that they start to maintain records of when they attempt to exercise every isolation valve and if that valve was successfully exercised. I also recommended that Aqua exercise (or attempt to exercise) 16,700 isolation valves per year until all the non-critical valves have been exercised in a 5 year period. The critical isolation valves that could not be exercised should be repaired or replaced as soon as practicable after the time they are found to be inoperable. If the non-critical valves are not repaired shortly after the time they were found to be inoperable, then, once per year, for example on April 15th, Aqua should submit a schedule to the OCA and other parties for replacing or repairing those isolation valves that could not be properly exercised during the prior year. After exercising all of its valves and repairing/replacing those it could not exercise, Aqua should be able to develop a reasonable schedule going forward for exercising its isolation valves.

<u>FIRE HYDRANTS</u>

Q. HOW MANY FIRE HYDRANTS ARE LOCATED IN AQUA'S WATER SYSTEMS THAT CANNOT PROVIDE A FIRE FLOW OF 500 GALLONS PER MINUTE AT 20 PSI?

A. According to Aqua's response to OCA-VIII-10, there are 16 public fire hydrants that cannot provide the minimum fire flow of 500 gallons per minute at 20 pounds per square inch. See Exhibit TLF-7W.

The 16 fire hydrants that cannot provide the minimum fire flow should be marked as such so that they will only be used for flushing and blow-offs. Aqua should provide confirmation to the OCA and other parties when this has been done.

<u>FLUSHING THE DISTRIBUTION SYSTEM</u>

Q. WHY IS FLUSHING WATER MAINS IMPORTANT?

A. Over time sediments can build up in the pipes and could result in discolored water during flow surges resulting from firefighting and main breaks. This especially occurs in older mains. Too much sediment in the mains can also affect the taste, clarity and color of water.

Q. ARE YOU AWARE OF ANY PUC OR DEP REQUIREMENTS FOR MAIN FLUSHING?

A. No. However, most water utilities, especially the larger ones, consider it good practice to flush the distribution system annually when possible.

Q. DOES AQUA HAVE A PROGRAM FOR FLUSHING ITS DISTRIBUTION SYSTEM?

A. Yes. In response to OCA-VIII-13, Aqua provided the following information: (1) In the SEPA division, the system is not completely flushed each year with flushing

activities scheduled based on customer issues and (2) in the Greater Pennsylvania area, all systems were flushed in 2020; however, six systems were not flushed in 2019 due to short term staffing problems. See Exhibit TLF-8W.

In regard to customer notifications in the SEPA system, most customer requests require one or two hydrants/blow-offs to be flushed and customers are not notified of these flushings. A reverse 911 campaign is used to notify customers when large areas are flushed. Customers in the Greater PA systems are notified through Aqua's Infostream, SwiftReach, local newspapers, reverse 911 calls and/or postings at individual customers.

Q. DO YOU HAVE ANY CONCERNS ABOUT THE INFORMATION THAT AQUA HAS PROVIDED CONCERNING FLUSHING?

A. In response to OCA-VIII-13, Aqua indicated that it opened 4,008 (1461+1490+1057) work orders regarding flushing in the SEPA Division during 2019 through September 2021; however, the entire Water Complaint Log during that period contained only 3,633 work orders. Of those, 2,705 complaints concerned flushing. Aqua should explain this discrepancy in its testimony. It may indicate that the Water Complaint Log is not complete.

Q. DO YOU RECOMMEND ANY CHANGES REGARDING AQUA'S FLUSHING PROCEDURES?

A. Yes. I recommend that Aqua flush the entire SEPA system once every three years, which is similar to the program that Pittsburgh Water and Sewer Authority has in place.[11]

PFAS INFORMATION

Q. DOES AQUA PROVIDE INFORMATION TO THE PUBLIC ABOUT THE LEVEL OF PER- AND POLFLUOROALKYL SUBSTANCES ("PFAS") CONTAMINATION IN ITS WATER SUPPLIES?

A. Yes. Aqua maintains a web site with information about its testing and treatment for PFAS[12]. The site also includes the results of source water monitoring. I visited the web site on October 22, 2021, and the most recent test results for some water sources were from 2016, 2017 and 2018. There is no explanation why recent test results are not provided for those water sources. My understanding is that testing was stopped at those sites because the test results indicated less than 13 parts per trillion ("ppt"). Aqua has set a company-wide standard for PFAS of 13 ppt.[13]

Q. **WHAT DO YOU RECOMMEND?**

A. I recommend that, for water sources that it no longer tests, Aqua add a statement explaining why testing was stopped. This will help to show customers that, even

[11] Pa. P.U.C. v. Pittsburgh Water and Sewer Authority, Docket Nos. R-2021-3024773, R-2021-3024774, R-2021-3024779, Recommended Decision at 76 (October 6, 2021). https://www.puc.pa.gov/pcdocs/1722040.pdf
[12] www.waterfacts.com
[13] Aqua Statement No. 1, p. 33

though information is several years old, the web site is up to date and that the most recent available information is provided.

<u>CUSTOMER COMPLAINTS REGARDING WATER SYSTEM</u>

Q. DID YOUR INVESTIGATION CONSIDER COMPLAINTS FROM WATER CUSTOMERS?

A. Yes. I have reviewed Aqua's Customer Complaint Log, complaints received by the OCA and Formal and Informal Complaints received by the PUC.

Q. WHAT DID YOUR REVIEW OF THE AQUA'S CUSTOMER COMPLAINT LOG CONSIST OF?

A. Aqua submitted a customer complaint log on a live Excel spreadsheet which can be sorted in a manner to determine if there were several complaints regarding the same issue that occurred around the same place and time. See Exhibit TLF-9W for a summary of the water complaint log per Aqua's response to OCA-VIII-18, Attachment No. 1.

Q. DO YOU HAVE CONCERNS THAT THE CUSTOMER COMPLAINT LOG SUBMITTED BY THE AQUA FOR THE WATER SYSTEM IS NOT COMPLETE?

A. Yes. As discussed above, Aqua reported more customer complaints which it responded to by flushing than there were total customer complaints included in the Complaint Log.

Q. DO YOU HAVE ANY OTHER COMMENTS CONCERNING THE WATER SYSTEM COMPLAINT LOG?

A. Yes. As previously mentioned, "pressure" should be included as a main category. Also, the Complaint Log submitted by Aqua did not contain customer names and addresses. Having customer names and addresses (in a classified log) would be helpful in the review of other customer complaints received by the OCA, PUC and customer testimony at the Public Input Hearings to identify if an issue is system-wide or just a small local area. Also, if the same customer has made more than one complaint about the same issue, it would be helpful in determining if Aqua's response was timely and satisfactory.

AQUA WASTEWATER SYSTEMS

Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF THE AQUA WASTEWATER SYSTEMS.

A. Aqua currently serves approximately 40,000[14] wastewater customers in Adams, Bucks, Carbon, Chester, Clarion, Clearfield, Delaware, Lackawanna, Luzerne, Monroe, Montgomery, Pike, Schuylkill, Venango, and Wyoming Counties. Throughout the Commonwealth of Pennsylvania Aqua operates 39 wastewater treatment plants ("WWTP")[15].

Q. DOES DEP HAVE ANY PENDING ACTIONS OR OUTSTANDING COMPLAINTS REGARDING AQUA'S WASTEWATER SYSTEMS?

[14] Aqua Statement No. 1, p. 7
[15] Aqua Statement No. 9, p.2

A. Yes. The annual Chapter 94 Reports submitted to DEP for the following Aqua systems have Corrective Action Plans (CAP): Masthope for increasing treatment plant capacity (moratorium is in effect); Mariasville for sampling influent parameters for a dosing tank; Emlenton for reducing infiltration/inflow (I/I); and Bunker Hill for reducing I/I.

Q. DOES DEP REQUIRE AQUA TO SUBMIT CHAPTER 94 REPORTS ON ALL OF ITS WASTEWATER SYSTEMS?

A. No, only those systems that were previously municipal systems or other systems that have agreed to submit similar reports.

Q. DID YOUR INVESTIGATION CONSIDER COMPLAINTS FROM WASTEWATER CUSTOMERS?

A. Yes. I have reviewed Aqua's Customer Complaint Log, complaints received by the OCA, Formal and Informal Complaints received by the PUC.

Q. WHAT DID YOUR REVIEW OF THE AQUA'S WASTEWATER CUSTOMER COMPLAINT LOG CONSIST OF?

A. Aqua submitted a customer complaint log in a live Excel spreadsheet which was sorted in a manner to determine if there were several complaints regarding the same issue that occurred in the same system. See Exhibit TLF-1WW.

Q. DO YOU CONSIDER THE CUSTOMER COMPLAINT LOG SUBMITTED BY AQUA FOR THE WASTEWATER SYSTEM TO BE COMPLETE?

A. No. The complaint log should contain names and addresses of the complainants for the same reasons mentioned above for the water system complaint log.

Q. WHAT ARE AQUA'S WASTEWATER IMPROVEMENTS PLANNED THROUGH FISCAL YEAR 2025?

A. In Aqua's response to OCA-VIII-31, it has various planned wastewater projects totaling $30,473,609 in 2021; $24,825,398 in 2022; $36,996,982 in 2023; $29,982,800 in 2024; and $33,537,510 in 2025. See Exhibit TLF-2WW.

WATER AND WASTEWATER COMPLAINTS

Q. ARE YOU AWARE OF OTHER CUSTOMER COMPLAINTS CONTAINING MORE DETAIL THAN AQUA'S COMPLAINT LOGS?

A. Yes. More detail for some types of complaints has been provided by customers submitting Formal Complaints and letters to the PUC and to the OCA.

The Company should respond to the following customer quality of service complaints summarized below.[16]

1. Customer doesn't drink the water due to chemical taste, Buck Ridge Drive, Drums.
2. Customer stated the bill was always based on estimate, the meter was never read. Does not drink the water because it tastes terrible and water was trucked in for days until the Company found the leak. Shingle Mill Drive, Drums.
3. Customer states that the water quality reeks of chlorine and other chemicals; is cloudy brown color half the time, if not darker. Company's solution is to run water until clear and charge customer for that water. North Street, Hawley.

[16] The OCA will provide Aqua with a copy of these complaints and letters under confidential cover.

4. Customer states that for the past nine years, the village of Chesterbrook has been subject to high pressures (190 to 200 psi) needed to serve higher areas causing numerous pressure reducing valves (PRVs) and washer/gasket blowouts within the village of Chesterbrook. The Company prefers to settle the claims for damages and water involved, instead of solving the problem. When the homes were built in the 1980s, the pressure was lower and did not require individual PRVs at each home. Company will not return customer's calls. Treaty Drive, Wayne.

5. Lives near the water treatment center on Bridgewater Road that smells so bad. Brookhaven.

6. Customer stated that sewerage bubbled up at their driveway, called Company but Aqua did not find anything. The bubbling occurred again a year later, customer called EPA and found out that the Company previously did work in area a few years ago and did not reconnect the customer's sewer lateral to the sewer line. Also, the Company wants to increase their sewer rates to pay for a treatment plant upgrade (expansion). L. Independence Dr., Lackawaxen.

7. Customer has not seen any great increases in water quality or distribution for over 3 decades. The water leaves residue on crystal glassware. Also, objects to having water rates increased due to Company buying wastewater treatment plants. Bryn Mawr.

8. Customer has spent $1,000 replacing toilets, shower heads and faucets. Toilets, faucets, shower, refrigerator water dispenser have sediment from hard water. Also replaced hot water heater elements. Customer objects to the rate differences between residential, industrial, and commercial customers. Bridle Court, Glenmoore.

9. Customer states that sometimes the chlorine is so intense one cannot drink it. Also, the customer is concerned that many capped water pipes were inspected nearby; but not the pipe attached to the customer's property. Yacht Club Drive, Greentown.

10. Customer states that the water tastes and smells horrible and has to filter the water to drink it. Appalachian Way, Hazel Township.

11. Pays for bottled water because the tap water smells. The water from Aqua is from Crum Creek and not as good as the water from the previous Springfield Water Company. Hampshire Road, Drexel Hill.

12. A real estate developer cannot obtain building permits because of a moratorium on additional connections to the wastewater system. The wastewater treatment plant needs to be expanded. Masthope.

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
R-2021-3024773 (Water)	Pittsburgh Water & Sewer Authority
R-2020-3024779 (Sewer)	Pittsburgh Water & Sewer Authority
R-2021-3025206 (Water)	Community Utilities of PA
R-2021-3025207 (Sewer)	Community Utilities of PA

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-3: For each water system, please provide copies of Company's unaccounted for water based on the PUC Section 500 Method for the calendar years 2020. Include the procedure for estimating non-revenue water such as water used for blow-offs, flushing, firefighting, main breaks, distribution tank overflows, etc. Explain all assumptions used in the calculations.

RESPONSE:

Please refer to the electronic files "OCA-VIII-3 - Attachment 1.xlsx" through "OCA-VIII-3 - Attachment 6.xlsx" for the AWWA Water Audit reports filed with the Commission for calendar year 2020.

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

American Water Works Association.
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Water Audit Report for: Aqua Pennsylvania - Honesdale Division
Audit Year: 2020 | Jan 01 2020 - Dec 31 2020 | 2020

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

										choose entry option:		
VOS	Volume from Own Sources:	n	g	6	781.108	MG/Yr	n g 4	2.00%	percent	under-registration	VOSEA
WI	Water Imported:	n	g	n/a	0.000	MG/Yr					WIEA
WE	Water Exported:	n	g	n/a	0.000	MG/Yr					WEEA
	WATER SUPPLIED:				797.049	MG/Yr					

AUTHORIZED CONSUMPTION

							choose entry option:	
BMAC	Billed Metered:	n	g	8	508.857	MG/Yr		
BUAC	Billed Unmetered:	n	g	n/a	0.000	MG/Yr		
UMAC	Unbilled Metered:	n	g	4	15.226	MG/Yr		
UUAC	Unbilled Unmetered:	n	g	3	1.272	MG/Yr	0.25%	default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 525.355 MG/Yr

WATER LOSSES

271.694 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

							choose entry option:		
SDHE	Systematic Data Handling Errors:	n	g	3	1.272	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	6	10.696	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	1.272	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 13.240 MG/Yr

Real Losses

Real Losses: 258.454 MG/Yr

WATER LOSSES: 271.694 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 288.192 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	7	264.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	5	11,835		(active *and* inactive)
	Service connection density:				45	conn./mile main	
	Are customer meters typically located at the curbstop/property line?				No		
Lp	Average length of (private) customer service line:	n	g	1	35.0	ft	(average distance between property line and meter)
AOP	Average Operating Pressure:	n	g	7	60.0	psi	

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$11.46	$/1000 gallons (US)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$370.00	$/Million gallons	$430,000	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Volume from Own Sources (VOS)
2: Billed Metered (BMAC)
3: Number of Service Connections (Nc)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[B]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

American Water Works Association.
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Water Audit Report for: Aqua Pennsylvania - Roaring Creek Division
Audit Year: 2020 | Jan 01 2020 - Dec 31 2020 | 2020

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

										choose entry option:		
VOS	Volume from Own Sources:	n	g	6	1,729.489	MG/Yr	n	g	4	2.00%	percent	under-registration VOSEA
WI	Water Imported:	n	g	n/a	0.000	MG/Yr						WIEA
WE	Water Exported:	n	g	n/a	0.000	MG/Yr						WEEA
	WATER SUPPLIED:				1,764.785	MG/Yr						

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n	g	8	967.668	MG/Yr		
BUAC	Billed Unmetered:	n	g	n/a	0.000	MG/Yr		
UMAC	Unbilled Metered:	n	g	4	107.950	MG/Yr	choose entry option:	
UUAC	Unbilled Unmetered:	n	g	3	2.419	MG/Yr	0.25%	default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 1,078.037 MG/Yr

WATER LOSSES

686.748 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

							choose entry option:		
SDHE	Systematic Data Handling Errors:	n	g	3	2.419	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	6	21.951	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	2.419	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 26.790 MG/Yr

Real Losses

Real Losses: 659.958 MG/Yr

WATER LOSSES: 686.748 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 797.117 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	7	298.9	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	5	18,513		(active *and* inactive)
	Service connection density:				62	conn./mile main	
	Are customer meters typically located at the curbstop/property line?				No		
Lp	Average length of (private) customer service line:	n	g	1	25.0	ft	(average distance between property line and meter)
AOP	Average Operating Pressure:	n	g	7	60.0	psi	

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$11.46	$/1000 gallons (US)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$370.00	$/Million gallons	$1,100,000	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Volume from Own Sources (VOS)
2: Billed Metered (BMAC)
3: Number of Service Connections (Nc)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[B]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

American Water Works Association.
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Water Audit Report for: Aqua Pennslyvania - Shenango Division
Audit Year: 2020 | Jan 01 2020 - Dec 31 2020 | 2020

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

										choose entry option:		
VOS	Volume from Own Sources:	n	g	6	3,624.268	MG/Yr	n g 4	2.00%	percent	under-registration	VOSEA
WI	Water Imported:	n	g	n/a	0.000	MG/Yr					WIEA
WE	Water Exported:	n	g	n/a	0.000	MG/Yr					WEEA
	WATER SUPPLIED:				3,698.233	MG/Yr					

AUTHORIZED CONSUMPTION

							choose entry option:	
BMAC	Billed Metered:	n	g	8	2,656.365	MG/Yr		
BUAC	Billed Unmetered:	n	g	n/a	0.000	MG/Yr		
UMAC	Unbilled Metered:	n	g	4	41.815	MG/Yr		
UUAC	Unbilled Unmetered:	n	g	3	6.641	MG/Yr	0.25%	default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 2,704.821 MG/Yr

WATER LOSSES

993.412 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

							choose entry option:		
SDHE	Systematic Data Handling Errors:	n	g	3	6.641	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	6	55.065	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	6.641	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 68.347 MG/Yr

Real Losses

Real Losses: 925.065 MG/Yr

WATER LOSSES: 993.412 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 1,041.868 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	7	506.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	5	30,790		(active *and* inactive)
	Service connection density:				61	conn./mile main	
	Are customer meters typically located at the curbstop/property line?				No		
Lp	Average length of (private) customer service line:	n	g	1	25.0	ft	(average distance between property line and meter)
AOP	Average Operating Pressure:	n	g	7	60.0	psi	

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$11.46	$/1000 gallons (US)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$370.00	$/Million gallons	$1,950,000	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Volume from Own Sources (VOS)
2: Billed Metered (BMAC)
3: Number of Service Connections (Nc)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[B]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

American Water Works Association.
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Water Audit Report for: Aqua Pennsylvania - SEPA Division
Audit Year: 2020 | Jan 01 2020 - Dec 31 2020 | 2020

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

											choose entry option:			
VOS	Volume from Own Sources:	n	g	6	33,850.741	MG/Yr	n	g	4	2.00%	percent	under-registration	VOSEA
WI	Water Imported:	n	g	6	4,209.646	MG/Yr	n	g	4	2.00%	percent	under-registration	WIEA
WE	Water Exported:	n	g	6	2,931.746	MG/Yr	n	g	4	2.00%	percent	under-registration	WEEA
	WATER SUPPLIED:				35,845.552	MG/Yr							

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n	g	8	28,507.761	MG/Yr			
BUAC	Billed Unmetered:	n	g	n/a	0.000	MG/Yr			
UMAC	Unbilled Metered:	n	g	n/a		MG/Yr	choose entry option:		
UUAC	Unbilled Unmetered:	n	g	3	71.269	MG/Yr	0.25%	default	

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 28,579.030 MG/Yr

WATER LOSSES

7,266.522 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

							choose entry option:		
SDHE	Systematic Data Handling Errors:	n	g	3	71.269	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	6	581.791	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	71.269	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 724.330 MG/Yr

Real Losses

Real Losses: 6,542.192 MG/Yr

WATER LOSSES: 7,266.522 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 7,337.791 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	7	4,591.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	5	379,000		(active *and* inactive)
	Service connection density:				83	conn./mile main	
	Are customer meters typically located at the curbstop/property line?				No		
Lp	Average length of (private) customer service line:	n	g	1	35.0	ft	(average distance between property line and meter)
AOP	Average Operating Pressure:	n	g	7	60.0	psi	

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$11.46	$/1000 gallons (US)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$370.00	$/Million gallons	$21,700,000	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Volume from Own Sources (VOS)
2: Billed Metered (BMAC)
3: Number of Service Connections (Nc)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[B]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

American Water Works Association.
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Water Audit Report for: Aqua Pennsylvania - Susquehanna Division
Audit Year: 2020 | Jan 01 2020 - Dec 31 2020 | 2020

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

choose entry option:

VOS	Volume from Own Sources:	n	g	6	399.822	MG/Yr	n g 4	2.00%	percent	under-registration	VOSEA
WI	Water Imported:	n	g	n/a	0.000	MG/Yr					WIEA
WE	Water Exported:	n	g	n/a	0.000	MG/Yr					WEEA
	WATER SUPPLIED:				407.982	MG/Yr					

AUTHORIZED CONSUMPTION

choose entry option:

BMAC	Billed Metered:	n	g	8	321.827	MG/Yr		
BUAC	Billed Unmetered:	n	g	n/a	0.000	MG/Yr		
UMAC	Unbilled Metered:	n	g	4	9.733	MG/Yr		
UUAC	Unbilled Unmetered:	n	g	3	0.805	MG/Yr	0.25%	default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 332.365 MG/Yr

WATER LOSSES

75.617 MG/Yr

Apparent Losses

choose entry option:

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

SDHE	Systematic Data Handling Errors:	n	g	3	0.805	MG/Yr	0.25%	default	
CMI	Customer Metering Inaccuracies:	n	g	6	6.767	MG/Yr	2.00%	percent	under-registration
UC	Unauthorized Consumption:	n	g	3	0.805	MG/Yr	0.25%	default	

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 8.376 MG/Yr

Real Losses

Real Losses: 67.241 MG/Yr

WATER LOSSES: 75.617 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 86.155 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	7	85.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	5	4,896		(active *and* inactive)
	Service connection density:				58	conn./mile main	
	Are customer meters typically located at the curbstop/property line?				No		
Lp	Average length of (private) customer service line:	n	g	1	25.0	ft	(average distance between property line and meter)
AOP	Average Operating Pressure:	n	g	7	85.0	psi	

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$11.46	$/1000 gallons (US)	Total Annual Operating Cost	
VPC	Variable Production Cost:	n	g	9	$370.00	$/Million gallons	$215,000	$/yr (optional input)

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Volume from Own Sources (VOS)
2: Billed Metered (BMAC)
3: Number of Service Connections (Nc)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[B]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

AWWA Free Water Audit Software: Worksheet

FWAS v6.0

American Water Works Association.
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Water Audit Report for: Aqua Pennsylvania - Whitehaven Division
Audit Year: 2020 | Jan 01 2020 - Dec 31 2020 | 2020

Click 'n' to add notes
Click 'g' to determine data validity grade

To edit water system info: go to start page

To access definitions, click the input name

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

WATER SUPPLIED

											choose entry option:			
VOS	Volume from Own Sources:	n	g	6	469.041	MG/Yr	n	g	4	2.00%	percent	under-registration	VOSEA
WI	Water Imported:	n	g	6	18.381	MG/Yr	n	g	4	2.00%	percent	under-registration	WIEA
WE	Water Exported:	n	g	6	0.204	MG/Yr	n	g	4	2.00%	percent	under-registration	WEEA
	WATER SUPPLIED:				497.161	MG/Yr							

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n	g	8	346.318	MG/Yr			
BUAC	Billed Unmetered:	n	g	10	11.363	MG/Yr			
UMAC	Unbilled Metered:	n	g	n/a		MG/Yr	choose entry option:		
UUAC	Unbilled Unmetered:	n	g	6	8.631	MG/Yr	custom	8.631	MG/Yr
	AUTHORIZED CONSUMPTION:				366.312	MG/Yr			

WATER LOSSES

130.849 MG/Yr

Apparent Losses

Default option selected for Systematic Data Handling Errors, with automatic data grading of 3

							choose entry option:			
SDHE	Systematic Data Handling Errors:	n	g	3	0.894	MG/Yr	0.25%	default		
CMI	Customer Metering Inaccuracies:	n	g	6	7.068	MG/Yr	2.00%	percent	under-registration	
UC	Unauthorized Consumption:	n	g	3	0.894	MG/Yr	0.25%	default		

Default option selected for Unauthorized Consumption, with automatic data grading of 3

Apparent Losses: 8.856 MG/Yr

Real Losses

Real Losses: 121.993 MG/Yr

WATER LOSSES: 130.849 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 139.480 MG/Yr

SYSTEM DATA

Lm	Length of mains:	n	g	7	243.0	miles	(including fire hydrant lead lengths)
Nc	Number of service connections:	n	g	5	8,960		(active *and* inactive)
	Service connection density:				37	conn./mile main	
	Are customer meters typically located at the curbstop/property line?				No		
Lp	Average length of (private) customer service line:	n	g	1	35.0	ft	(average distance between property line and meter)
AOP	Average Operating Pressure:	n	g	7	60.0	psi	

COST DATA

CRUC	Customer Retail Unit Charge:	n	g	5	$11.46	$/1000 gallons (US)	Total Annual Operating Cost		
VPC	Variable Production Cost:	n	g	9	$370.00	$/Million gallons	$250,000	$/yr (optional input)	

WATER AUDIT DATA VALIDITY TIER:

***** The Water Audit Data Validity Score is in Tier III (51-70). See Dashboard tab for additional outputs. *****

go to dashboard

A weighted scale for the components of supply, consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION TO IMPROVE DATA VALIDITY:

Based on the information provided, audit reliability can be most improved by addressing the following components:

1: Volume from Own Sources (VOS)
2: Billed Metered (BMAC)
3: Number of Service Connections (Nc)

KEY PERFORMANCE INDICATOR TARGETS:

OPTIONAL: If targets exist for the operational performance indicators, they can be input below:

Unit Total Losses:		gal/conn/day
Unit Apparent Losses:		gal/conn/day
Unit Real Losses[A]:		gal/conn/day
Unit Real Losses[B]:		gal/mile/day

If entered above by user, targets will display on KPI gauges (see Dashboard)

CLASS "A" AND "B" WATER COMPANY
PUC ANNUAL REPORT
OF

Utility Code
210104

Company:

Aqua Pennsylvania, Inc

Address:

762 W. Lancaster Ave. Bryn Mawr, PA 19010
Address City State Zip

TO THE
PENNSYLVANIA
PUBLIC UTILITY COMMISSION

For the Year Ended December 31, 2020

Telephone Number 610-525-1400

Fax Number 833-208-0100

E-Mail BJPalmer@aquaamerica.com

Web Site Address www.aquaamerica.com

Officer to whom correspondence
concerning this report should be addressed:

William C. Packer
First Name Last Name

Vice President/Controller
Title

762 W. Lancaster Ave. Bryn Mawr, PA 19010
Address City State Zip

Aqua 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	40,858,000	111,940
3	Water Obtained from Other Independent Utilities	825,000	2,260
4	**Total Water Delivered**	**41,683,000**	114,200
5	**Metered Sales:**		
6	Residential	19,551,745	53,566
7	Commercial	9,025,060	24,726
8	Industrial	2,922,807	8,008
9	Public	810,288	2,220
10	Other Water Utilities	899,372	2,464
11	Private Fire Protection	114,842	315
12	Public Fire Protection		
13	Other Metered Sales Identify Bulk	3,217	9
14	**Total Metered Sales**	33,327,331	91,308
15	**Unmetered Sales:**		
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**	33,327,331	91,308
23	**Non-Revenue Usage Allowances:**		
24	**Authorized Unmetered Usage:**		
25	Main Flushing		
26	Blow-off Use		
27	Others: Identify		
28	Unauthorized Use		
29	Unavoidable Leakage _____ gpd/mile of main		
30	Adjustments:		
31	Located & Repaired Breaks in Mains & Services		
32	Others Identify		
33	**Total Allowances & Adjustments**		
34	**Unaccounted-for-Water**	**8,355,669**	
35	**Percentage Unaccounted-for-Water**	**20.0%**	

Data for Calendar Year 2020 from AQUA's Response to OCA-VIII-3, Attachments 1 through 6

	Water in Million Gallons (MG)				System Data	
Division	Supplied	Authorized Consumption	Losses Total	Non-Revenue Water	Mains Miles	Service Connections
Honesdale	797.049	525.356	271.694	288.192	264.0	11,835
Roaring Creek	1,764.785	1,078.037	686.748	797.117	298.9	18,513
Shenango	3,698.233	2,704.821	993.412	1,041.868	506.0	30,790
SEPA	35,845.552	28,579.030	7,266.522	7,337.791	4,591.0	379,000
Susquehanna	407.982	332.365	75.617	86.155	85.0	4,896
WhiteHaven	497.161	366.312	130.849	139.480	243.0	8,960
Totals	43,010.762	33,585.921	9,424.842	9,690.603	5,987.9	453,994

Data from the 2020 Annual Report submitted to the PUC in MG

Total System	Delivered to Distribution	Total Sales	Unaccounted for Water	Unaccounted for Water %
Total Delivered	41,683.000	33,327.331	8,355.669	20.0%

AQUA PENNSYLVANIA, INC.
2021 RATE CASE
FILING REQUIREMENTS

I. Quality of Service

QS2. Indicate whether the company is in compliance with 52 Pa. Code, § 65.6(a) regarding normal operating pressure standards, and with 52 Pa. Code, § 65.6(d) regarding pressure surveys at regular intervals.

a. Provide details on any water pressure problems, lasting longer than 5 days, which had occurred since the last rate proceeding in any part of the water transmission and distribution system.

b. Describe any action taken on a temporary basis, and the long term solutions developed to address any water pressure problems.

A. a. The Company believes that it is in compliance with 52 Pa. Code, § 65.6(a) regarding normal operating pressure standards, and with 52 Pa. Code, § 65.6(d) regarding pressure surveys at regular intervals. The Company has not experienced any significant pressure problems lasting longer than five days since the last rate proceeding in any part of the water transmission and distribution system.

b. The Company has identified low pressure zones in various high level areas or limited marginal extents in the upper elevations of existing pressure zones. In an effort to proactively address potential pressure problems, the Company has installed pressure gauges, replaced aged waterlines, modified well and pump station outputs and storage tank alternatives, installed flow control valves at booster stations to regulate and stabilize flow, installed new boundary valves, modified boundary limits of existing pressure zones, and created new pressure zones at higher elevation areas.

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-15: For each water system, please provide copies of the pressure surveys performed by the Company in accordance with 52 Pa Code § 65.6(d) for the calendar years 2019, 2020 and 2021 to date.

RESPONSE:

In order to comply with the requirements of 52 Pa. Code § 65.6 (d), the Company records pressure on over 24,000 hydrants located at representative points throughout its separate distribution systems during its hydrant inspection process. Pressure information is generally gathered between 7:00 AM and 3:00 PM. The then-current pressure recording is compared to the normal average pressure. Pressure results observed by the field representatives that are out of the ordinary (typically 20% above or below the normal pressure) are reported to a supervisor for further investigation. In addition to the process described above, over 220 facilities in Southeastern Pennsylvania and the majority of the Company's systems elsewhere in Pennsylvania ("Greater Pennsylvania") are connected to the Company's Supervisory Control and Data Acquisition ("SCADA") system, which is monitored 24 hours a day, 365 days a year. Analog readings such as pressure, flow and tank levels are electronically recorded a minimum each hourly. Those systems not connected to SCADA in Greater Pennsylvania are recorded via chart recorders. Hydrant and SCADA data for the past three years are very voluminous can be provided upon further request.

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-16: For each pressure zone in each distribution system, provide the address (or otherwise identify the location) of every customer who has a normal static head of less than 25 psi and each customer who has a normal static head of greater than 125 psi.

RESPONSE:

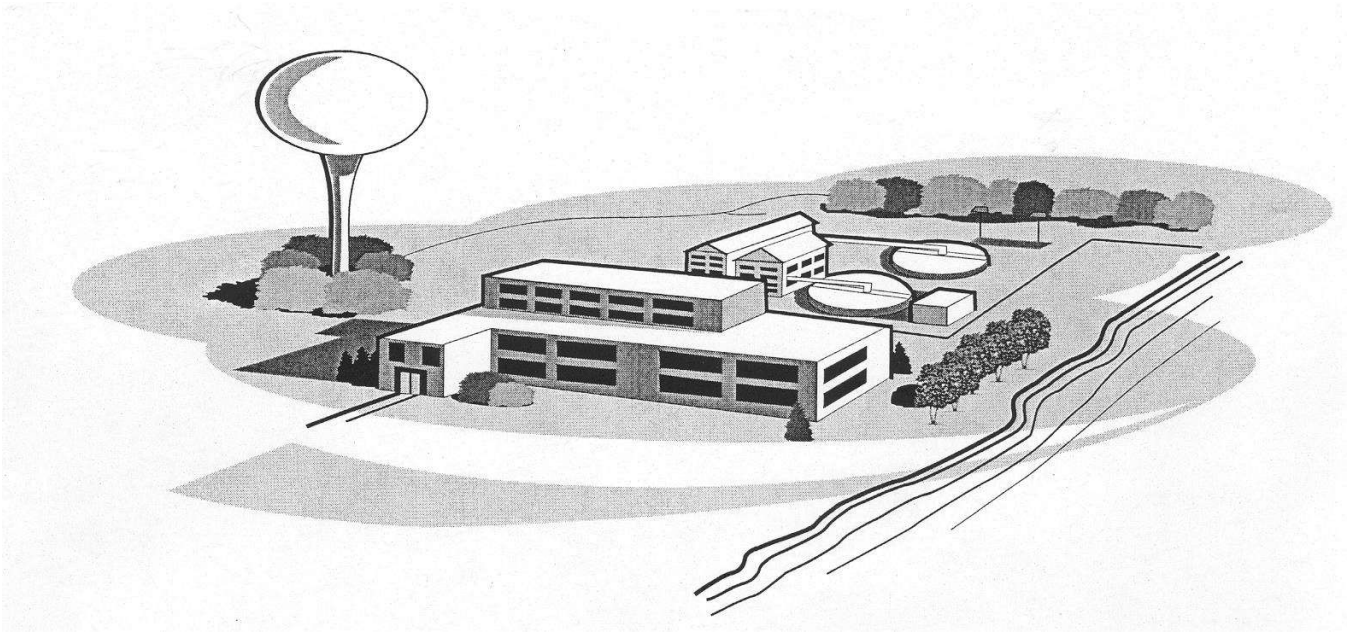
The Company does not maintain a listing of every customer's address with a normal pressure of less than 25 psi or a normal pressure of greater than 125 psi as measured at the water main. Rather, the Company monitors pressures at water sources and addresses low- or high-pressure reports from customers as they occur. For new services with an expected pressure of greater than 85 psi, the Company will require the developer/builder to install service line pressure reducing valves ("PRV").

In the large, contiguous systems in southeast PA the Company has a long history of pressure readings taken during hydrant inspections that provide a view of pressure across the system. For other systems, hydraulic models that have been prepared for various uses can provide a similar picture of pressures across the systems. Note however, that hydraulic models are not available for every Company water system. Models are only created on an as-needed basis, often for the purpose of evaluating and comparing various capital improvement options.

Please refer to "Highly Confidential OCA-VIII-16 - Attachment 1" for maps of SEPA showing hydrant pressures and average pressures for the various systems where hydraulic models are available.

Public Water Supply Manual

383-2125-108



PART II
COMMUNITY SYSTEM DESIGN STANDARDS

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
For more information, visit DEP's Web site
at www.depweb.state.pa.us/, Keyword: "Drinking Water."

conditions of flow. The normal working pressure in the distribution system should be approximately 60 psig.

2. Diameter

The minimum size of water main which provides for fire protection and serving fire hydrants shall be 6-inch diameter. Larger sized mains will be required if necessary to allow the withdrawal of the required fire flow while maintaining the minimum residual pressure of 20 psig.

The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of 3-inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances.

3. Fire Protection

When fire protection is to be provided, system design should be such that fire flows and facilities are in accordance with the requirements of the State Insurance Services Office.

4. Dead Ends

Dead ends shall be minimized by looping all mains whenever practical. Where dead end lines are necessary in the first stage of construction of a distribution system, the lines shall be provided with the appropriate flushing devices as outlined in Section VIII.B.5.

5. Flushing

Where dead end mains occur, they shall be provided with an approved blow-off or flushing hydrant for flushing purposes. Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. Fire hydrants may be used for this purpose provided they comply with all of DEP's requirements on fire hydrant installation. No flushing device shall be directly connected to any sewer.

C. Shut-Off Valves

A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards will be minimized during repairs. Valves should be located at not more than 500 foot intervals in commercial districts and at not more than one block or 800 foot intervals in other areas of the distribution system.

D. Hydrants

Where freezing temperatures prevail, hydrants of the dry barrel type are preferred. Hydrants of this type should comply with the criteria set forth in AWWA's Standard

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-9: For each water system where all the isolation valves have not been exercised during the past 5 years, please provide the following information:

a. How many are installed in the system?
b. How many were exercised during the calendar year 2020?
c. How many were not exercised during the past 5-years?
d. How many were repaired or replaced during 2020 and 2021 to date?
e. What is the frequency of valve maintenance?

RESPONSE:

a. Please see the table below for the number of new isolation valves installed during the calendar years 2017, 2018, 2019, 2020 and 2021 to date. The numbers indicated for 2021 do not include projects that are not yet completed and in service as of the date of this response. 2017 through 2021 values include new replaced valves from main replacements along with new valves installed for organic growth.

	2017	**2018**	**2019**	**2020**	**2021 10/15/2021**
PA - Central	211	180	247	132	0
PA - Northeastern	230	182	169	203	3
PA - Southeastern	2818	2331	3200	2231	1061
PA - Western	198	191	479	143	25
Grand Total	**3457**	**2884**	**4095**	**2709**	**1089**

b. The Company estimates that, based upon the number of main replacement projects, main break repairs along with other normal day to day business activities that require closing valves to isolate portions of the distribution

system to complete those projects and repairs, between 6,000 and 8,000 valves were exercised in 2020.

c. The Company does not keep records of the location of isolation valves that have not been exercised in the past five years.

d. Please see the table below for the number of isolation valves that have been repaired during the calendar years 2020, and 2021 to date.

2020	129
2021 (10/15/2021)	93
Grand Total	**222**

See question a. for replaced valves in the system. A majority of valves replaced are performed during main replacement projects.

e. The company does not have a program for operating valves based off frequency. As stated above the company operates approximately 6000 to 8000 valves during it normal course of business which we estimate to be close to 10 percent of the valves in service each year. Although the company does not operate by frequency, it does have a critical valve program. The program operates critical valves no less than once every four years. There are 270 valves in the program which began in 2017. The program is on-going and can change from time to time depending on changes being made in the distribution system. Below is a count of the amount of valves that are in the system according to our GIS system for reference.

Valve Count as of 10/2021	**Total**
PA - Central	5,374
PA - Northeastern	6,322
PA - Southeastern	66,033
PA - Western	5,818
Grand Total	**83,547**

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-10: Please discuss the Company's plan for inspecting and testing fire hydrants.

RESPONSE:

Aqua PA inspects and tests fire hydrants on an annual basis.

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-11: For each water system, how many of the Company's fire hydrants cannot provide a fire flow of 500 gpm at 20 psig for a 2-hour duration?

RESPONSE:

From the last rate case, Aqua provided information regarding all fire hydrants connected to 4-inch mains or smaller that are not capable of providing 500 gallons per minute of water at 20 psi.

For all of GPA we have just (2) hydrants that are on 4" or smaller mains and flow <500 GPM @20psi.

- 231-17 – Gordon Boro in Central Pa
- 235-20 – Eagle Rock (Hazle Township) in North East Pa

SEPA Data

Count	FH. #	FH. #	Address	Address	Twp	County	Date of Test	Flow (GPM)
1	9	114	Midland Ave	Louella Ave	Radnor	Delaware	5/5/2020	411
2	74	36	S.Monroe Street	E 4th Ave	Media	Delaware	5/20/2020	291
3	74	12	W Front Street	S Orange Street	Media	Delaware	4/16/2020	475
4	74	19	E Front Street	Haideman	Media	Delaware	4/21/2020	411
5	74	20	E 2nd Street	Haideman	Media	Delaware	4/29/2020	237
6	74	22	S Jackson	E 2nd street	Media	Delaware	5/12/2020	237
7	74	10	W Front Street	West Ave	Media	Delaware	5/12/2020	168
8	57	143	Chestnut La	Woodwar d Rd	Nether Providence	Delaware	4/23/2020	291

9	3	754	Berwick Rd	City Line	Lower Merion	Montgomery	5/2/2020	475
10	46	1-0	RW 150 ft S/O	Sycamore Ave	Morton	Delaware	5/20/2020	375
11	92	100	Magnolia	Overlook	Bristol Twp	Bucks	5/20/2020	237
12	85	3	2nd Avenue	Bristol Pike	Bristol Boro.	Bucks	5/20/2020	291
13	91	60	Swain	Mifflin Street	Bristol Boro.	Bucks	5/20/2020	291
14	6	41	E Essex Ave	Wabash	Lansdowne	Delaware	4/28/2020	291

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-12: For each water system, identify every public fire hydrant that is connected to a water main of less than 6-inch diameter.

RESPONSE:

Please see the below table:

Division	**1**	**1 1/2**	**1 1/4**	**2**	**2 1/2**	**3**	**4**	**NA**	**UNK**	**Grand Total**
PA - Central - Roaring Creek	3			3		1	44	4	1	56
PA - Central - Susquehanna							16	3		19
PA - Northeast - Honesdale		1	1	2			14			18
PA - Northeast - White Haven							4	2	14	20
PA - Southeast - East				1		1	32	10	2	46
PA - Southeast - Great Valley	1						24	34		59
PA - Southeast - South							109	32	2	143
PA - West - Shenango				8	1	1	35		1	46
Grand Total	**4**	**1**	**1**	**14**	**1**	**3**	**278**	**85**	**20**	**407**

Witness: Todd Duerr
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-13: For each water system, please indicate the number of times the Company's distribution system was flushed for the calendar years 2019, 2020 and 2021 to date. If the entire system was not flushed in a given instance, please indicate the percentage and location of the portion of the system that was flushed in that instance:

a) If the system was not completely flushed at least once in a given year, please explain why not.
b) What customer notification was given prior to routine flushing operations?

RESPONSE:

Southeastern Pennsylvania Division (SEPA)

In the SEPA division, the system is not completely flushed each year. The distribution system has over 4000 miles of pipe, 120 operating pressure zones, and 20,000 hydrants within a service area of over 400 square miles. The Company has a full-time employee who is available for flushing activities at night (3rd shift) along with 15 daytime distribution operators. The midnight employee works the midnight shift to lessen the impact of flushing on our customers. Flushing activities are schedule based off customer issues through our Technical Service Department in addition to other operational requests throughout the Company. Most of the requests are for one or two hydrants and/or blow-offs in a general area lasting up 60 minutes at each location. Customers are not notified for these small flushing activities. If there are large areas of flushing which involve multiple streets in close proximity to each other, a reverse 911 phone campaign will be used to notify our customers of the work that is being performed. All flushing requests are recorded in our work order system. Below is the report of the number of work orders from the past two years including the work performed in 2021.

-	2019 Complete	2020 Complete	9/30/2021 Complete
Total	**1461**	**1490**	**1057**

Greater Pennsylvania Area (GPA)

In GPA, all water systems were flushed in 2020. For 2021, all water systems were already flushed or are in the process of being flushed; we expect to complete all systems again. In 2019, the White Haven division was unable to flush the following systems due to a short term staffing issue: Applewood, Barrett, Greenbriar, Hex Acres, Rhodes Terrace, and Yalick Farms. All other GPA water systems were flushed in 2019.

Customers in all divisions are notified of planned flushing operations through Aqua's Infostream, SwiftReach, local newspapers, reverse 911 calls, and/or postings at individual residences and businesses.

Company Complaint Log Summary in Response to OCA-VIII-18 Attachment 1

COMPLAINT ISSUE	Air in Line (See Note 1)	Discolored Water Sediment (See Note 2)	Urgent Health Issues (See Note 3)	Taste & Odor (See Note 4)	Hardness Fluoride CCR
SYSTEM					
BEECH MOUNTAIN	2	5	1	1	0
BENSALEM	8	60	1	5	0
BRISTOL	7	64	2	30	1
BUNKER HILL	1	1	0	0	0
CHALFONT	4	18	0	17	0
CLARENDON	0	5	0	5	0
COUNTRY CLUB	0	1	0	5	0
CRAWFORD DIVISION	0	2	0	3	0
EAGLE ROCK	4	27	0	9	0
EAST CAMERON	0	0	0	1	0
EAST PIKELAND	0	7	0	0	0
EDGEWOOD	5	20	0	4	0
EVANWOOD	0	0	0	1	0
EMLENTON	1	2	0	0	0
FACTORYVILLE	1	4	0	3	0
FAWN LAKE FOREST	16	65	3	8	0
FIELDCREST	0	11	0	1	0
FLYING HILLS	0	4	0	1	0
FOREST PARK	0	4	0	1	0
FRANKLIN	0	2	0	0	0
FRIENDSHIP	11	86	0	7	3
GARBUSH	0	1	0	0	0
GARDEN HILLS	0	1	0	1	0
GEIGERTOWN	0	2	0	0	0
GLENBURN	0	0	0	1	0
GOLDEN OAKS	0	3	0	2	0
GOULDSBORO	0	2	0	2	0
GREENBRIAR	0	0	0	1	0
HAMILTON	0	3	1	2	0
HATBORO	6	17	0	13	0
HAWLEY	0	17	1	7	0
HEX ACRES	0	1	0	1	0
HILL CREST ESTATES II	4	17	0	0	0
HONESDALE	10	36	1	37	0
HONEYBROOK	0	0	0	4	0
HOP BOTTOM	1	1	0	1	0
JEFFERSON HEIGHTS	0	2	1	0	0
JENKS TWP	1	1	0	0	0
KRATZERVILLE	1	0	0	0	0
LAKE LATONKA (WESTERN UTILITIES)	0	1	0	1	0
LAUREL LAKES	3	3	0	0	0
MAHONING TWP (OPERATING AGREEMENT)	0	0	0	3	0
MAIN SYSTEM	215	949	19	626	27
MAPLE HILLS	1	1	0	2	0
MERIBAH	8	3	0	0	0
MIDWAY MANOR	1	12	0	2	0
MIFFLIN WATER	4	1	0	1	0

COMPLAINT ISSUE	Air in Line (See Note 1)	Discolored Water Sediment (See Note 2)	Urgent Health Issues (See Note 3)	Taste & Odor (See Note 4)	Hardness Fluoride CCR
MONROE MANOR	0	1	0	7	0
MOSCOW	0	3	0	0	0
MOUNT COBB	0	0	0	1	0
MOUNTAIN HOME	0	1	0	1	0
MT JEWETT BOROUGH	0	0	0	1	0
OAKHILL	9	8	0	5	0
ONEIDA	5	4	0	1	0
PAUPACK LODGE	0	0	0	1	0
PAUPACKAN LAKE	2	2	0	3	0
PEDDLER'S VIEW	0	1	0	1	0
PENN LAKE	2	9	0	0	0
PENNSVIEW	0	1	0	0	0
PERKIOMEN TWP	0	2	0	3	0
PERKIOMEN WOODS	2	1	0	2	0
PINECREST LAKE	0	13	0	0	0
PINE BEACH	1	0	0	0	0
RIVERCREST	7	2	1	3	1
ROARING CREEK	24	58	3	25	0
ROBIN HOOD LAKES	1	3	0	1	0
SAND SPRINGS	0	35	0	8	0
SHENANGO VALLEY	21	63	4	30	0
SPRING RUN	1	60	0	6	0
SPRINGHOUSE FARMS	2	0	0	1	0
STANTON	1	2	1	1	0
STONECROFT	0	1	0	2	0
SUBURBIA	0	3	0	1	0
SUNSET HILLS	0	0	0	1	0
SUPERIOR MAIN SYSTEM	6	58	1	15	2
SUSQUEHANNA	4	13	2	2	0
TAFTON/ WILSON HILL	1	12	0	3	0
TANGLEWOOD NORTH SKI	5	15	0	3	0
TANGLWOOD GOLF & LAKES	2	8	0	2	0
THE LINKS AT GETTYSBURG	0	1	0	1	0
THE PINES	0	1	0	0	0
THORNHURST COUNTRY CLUB	1	3	0	2	0
TREASURE LAKE	11	88	2	17	0
TWIN LAKES	0	0	0	2	0
UPPER PROVIDENCE	2	3	0	1	0
UWCHLAN	20	62	0	27	1
WAPWALLOPEN	0	2	0	0	0
WAYMART	1	0	0	1	0
WEST CHESTER	9	59	3	28	0
WEST TRACT	0	4	0	0	0
WHITE HAVEN	2	0	0	0	0
WHITE ROCK	1	0	3	2	0
WOODMONT	0	0	0	1	0
YALICK FARMS	0	2	0	3	0
TOTALS	**458**	**2066**	**50**	**1024**	**35**

Note 1 - Air in the Lines and/or Cloudy, Milky, Bubbling

Note 2 - Black, Brown, Rusty, Yellow, Green Water; Sediment in Water

Note 3 - Burning, Slippery, Slick, Pink Water, Irate or Threatening, Healthcare Facilities (Hospitals, Dialysis)

Note 4 - Chlorine, Musty, Sulfur

WASTEWATER COMPLAINT LOG 2019, 2020 AND UP TO OCTOBER 18, 2021 FROM RESPONSE TO OCA-VIII-24, ATTACHMENT 1

AQUA PENNSYLVANIA WASTEWATER - DIVISIONS

Issue	East	Great Valley	Honesdale	Roaring Creek	Satellites	South	Superior	Treasure Lake	White Haven
Grinder Pump Alarm	1		4		26	3	1	16	46
Repair Grinder Pump			3		4		1	21	19
Locate Sewer Line	4					1			1
Sewer Backup	105	14	8		15	15	6	19	55
Sewer Billing		2	1						
Sewer Break	3						1		
Sewer Clogged	19	1	1			4	3	2	5
Sewer Inspection	1				9		1		
Sewer Investigation	22	1			3	5	1	9	7
Sewer Leak	14	8	7		3	8	4	10	16
Sewer Lid Issue	6	1			1	1	2	2	2
Sewer Odor	15	4	4	1	2	4	5	29	15
Sewer Pump Repair					1		1	2	4
Turn Off/On	1								
Totals	191	31	28	1	64	41	26	110	170

Witness: William C. Packer
Date: 10/22/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET VIII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-VIII-31: For each of the Company's wastewater systems, provide information on all planned improvements to be made within the next 5 years.

RESPONSE:

Please see the attached schedule in pdf format OCA-VIII-31.

Exhibit TLF-2WW

Aqua PA Wastewater, Inc. - Planned Investments 2021 - 2025

Response to OCA-VIII-31

DEPT DESCRIPTION	PROJECT GROUP	Values 2021	2022	2023	2024	2025
Avon Grove WW (15-898)	0520-Equipment (TPB)	4,000	4,000	1,000	1,000	1,000
Avon Grove WW (15-898) Total		**4,000**	**4,000**	**1,000**	**1,000**	**1,000**
Beech Mountain	0117-Forced Mains Sewer (SC)	130,000	30,000	50,000	480,000	30,000
	0150-Contributions in Aid of Constr	-400	0	0	0	0
	0305-New Services	25,000	20,000	20,000	20,000	20,000
	0310-Renewal Services-Regular (SC)	30,000	30,000	30,000	30,000	30,000
Beech Mountain Total		**184,600**	**80,000**	**100,000**	**530,000**	**80,000**
Bridlewood	0118-Gravity Mains Sewer (SC)	0	50,000	0	0	0
	0515-Improvements Other (TPB) (NS)	25,500	0	0	0	0
	0520-Equipment (TPB)	30,911	49,200	49,200	49,200	49,200
	0720-Improvements	0	0	0	0	0
	0902-Safety	8,539	0	0	0	0
Bridlewood Total		**64,950**	**99,200**	**49,200**	**49,200**	**49,200**
Bunker Hill WW - 0895	0118-Gravity Mains Sewer (SC)	0	0	0	0	0
	0305-New Services	5,000	0	0	0	0
	0512-Treatment Plants	17,465	0	40,000	70,000	350,000
	0515-Improvements Other (TPB) (NS)	7,424	10,000	10,000	10,000	10,000
	0516-Pumping Equipment Sewer (NS)	10,000	10,000	10,000	10,000	10,000
	0520-Equipment (TPB)	10,000	10,000	10,000	10,000	10,000
Bunker Hill WW - 0895 Total		**49,889**	**30,000**	**70,000**	**100,000**	**380,000**
Chelteham WW - 15-0691	0118-Gravity Mains Sewer (SC)	1,245,000	1,510,000	4,540,000	9,000,000	9,350,000
	0150-Contributions in Aid of Constr	-6,000	-170,502	-696,018	-3,610,500	-3,778,990
	0305-New Services	30,000	0	0	0	0
	0310-Renewal Services-Regular (SC)	65,000	75,000	75,000	25,000	25,000
	0810-Mechanical Equipment	0	0	0	0	0
Chelteham WW - 15-0691 Total		**1,334,000**	**1,414,498**	**3,918,982**	**5,414,500**	**5,596,010**
Chesterdale	0118-Gravity Mains Sewer (SC)	50,000	0	0	0	0
	0150-Contributions in Aid of Constr	-243,000	0	0	0	0
	0511-Improvements Other(TPB) (SC)	500,000	350,000	0	0	0
	0512-Treatment Plants	0	0	35,000	0	0
	0515-Improvements Other (TPB) (NS)	100,000	0	0	0	0
	0518-Pumping Equipment Sewer (SC)	0	0	0	100,000	0
	0520-Equipment (TPB)	7,690	25,000	25,000	25,000	25,000
	0903-Land Purchases/Disposals	0	0	0	0	0
Chesterdale Total		**414,690**	**375,000**	**60,000**	**125,000**	**25,000**
Cove Village WW	0117-Forced Mains Sewer (SC)	5,000	7,500	500,000	0	0
	0118-Gravity Mains Sewer (SC)	250,000	450,000	0	0	0
	0305-New Services	7,500	7,500	7,500	7,500	7,500
	0511-Improvements Other(TPB) (SC)	185,000	7,500	522,500	1,500,000	0
	0512-Treatment Plants	67,250	0	50,000	0	0
	0515-Improvements Other (TPB) (NS)	7,500	7,500	7,500	7,500	7,500
	0516-Pumping Equipment Sewer (NS)	7,500	7,500	7,500	7,500	7,500
	0518-Pumping Equipment Sewer (SC)	10,000	10,000	10,000	10,000	2,500
	0520-Equipment (TPB)	7,500	557,500	7,500	7,500	7,500
	0615-Lab Equipment (Lt)	1,250	5,000	15,000	5,000	5,000
	0705-Fence Replacements	35,000	0	0	0	0
	0905-Retirements W/O Replacement	5,000	7,500	500,000	0	0
Cove Village WW Total		**588,500**	**1,067,500**	**1,627,500**	**1,545,000**	**37,500**
Deerfield Knoll	0118-Gravity Mains Sewer (SC)	0	0	50,000	0	0
	0511-Improvements Other(TPB) (SC)	0	0	0	0	750,000
	0512-Treatment Plants	35,000	0	0	0	0
	0516-Pumping Equipment Sewer (NS)	10,000	0	0	0	0
	0520-Equipment (TPB)	13,100	13,100	13,100	13,100	13,100
	0902-Safety	20,000	0	0	0	0
Deerfield Knoll Total		**78,100**	**13,100**	**63,100**	**13,100**	**763,100**
Eagle Rock	0117-Forced Mains Sewer (SC)	25,000	270,000	20,000	470,000	20,000
	0118-Gravity Mains Sewer (SC)	150,000	0	500,000	1,640,000	1,400,000
	0150-Contributions in Aid of Constr	-2,710	0	0	0	0
	0305-New Services	72,500	100,000	94,000	94,000	94,000
	0310-Renewal Services-Regular (SC)	25,000	25,000	25,000	25,000	25,000

Aqua PA Wastewater, Inc. - Planned Investments 2021 - 2025

Response to OCA-VIII-31

DEPT DESCRIPTION	PROJECT GROUP	Values 2021	2022	2023	2024	2025
Eagle Rock	0510-Automated Distr Controls	0	0	0	0	150,000
	0511-Improvements Other(TPB) (SC)	12,000	112,000	112,000	12,000	12,000
	0512-Treatment Plants	25,500	30,000	55,000	430,000	2,530,000
	0516-Pumping Equipment Sewer (NS)	30,200	15,000	15,000	15,000	15,000
	0518-Pumping Equipment Sewer (SC)	56,000	75,000	155,000	875,000	75,000
	0520-Equipment (TPB)	50,000	50,000	50,000	50,000	50,000
	0705-Fence Replacements	10,000	10,000	10,000	10,000	10,000
	0760-Power Generation Equip (NS)	5,000	5,000	5,000	55,000	355,000
Eagle Rock Total		**458,490**	**692,000**	**1,041,000**	**3,676,000**	**4,736,000**
East Bradford	0118-Gravity Mains Sewer (SC)	0	0	0	0	0
	0512-Treatment Plants	15,000	0	0	0	0
	0515-Improvements Other (TPB) (NS)	0	0	0	0	0
	0518-Pumping Equipment Sewer (SC)	11,310	0	0	0	0
	0520-Equipment (TPB)	30,000	9,000	9,000	12,000	84,000
	0761-Power Generation Equip (SC)	0	0	0	20,000	200,000
East Bradford Total		**56,310**	**9,000**	**9,000**	**32,000**	**284,000**
East Bradford Collection	0211-Flow Measuring Devices Sewer	11,341	0	0	0	0
	0305-New Services	20,000	25,000	25,000	25,000	25,000
	0511-Improvements Other(TPB) (SC)	138,359	149,800	155,100	160,500	191,000
East Bradford Collection Total		**169,700**	**174,800**	**180,100**	**185,500**	**216,000**
East Norriton WW 15-0692	0112-Gravity Mains Sewer (NS)	224,000	0	2,000,000	0	0
	0118-Gravity Mains Sewer (SC)	737,900	581,200	4,916,400	421,100	423,800
	0130-Highway Relocations (NS)	114,000	1,245,000	0	0	0
	0305-New Services	20,000	24,000	24,000	24,000	24,000
	0516-Pumping Equipment Sewer (NS)	200,000	0	0	0	0
East Norriton WW 15-0692 Total		**1,295,900**	**1,850,200**	**6,940,400**	**445,100**	**447,800**
Emlenton WW (15-0896)	0112-Gravity Mains Sewer (NS)	0	0	0	0	0
	0118-Gravity Mains Sewer (SC)	120,000	45,000	75,000	75,000	75,000
	0305-New Services	500	12,000	7,500	5,000	5,000
	0310-Renewal Services-Regular (SC)	15,000	15,000	35,000	35,000	35,000
	0510-Automated Distr Controls	0	5,000	0	0	0
	0512-Treatment Plants	48,000	150,000	0	0	0
	0515-Improvements Other (TPB) (NS)	0	50,000	50,000	50,000	50,000
	0520-Equipment (TPB)	0	10,000	10,000	10,000	10,000
Emlenton WW (15-0896) Total		**183,500**	**287,000**	**177,500**	**175,000**	**175,000**
Honeycroft WW (15-0670)	0118-Gravity Mains Sewer (SC)	0	0	0	0	50,000
	0512-Treatment Plants	0	0	0	0	30,000
	0515-Improvements Other (TPB) (NS)	7,800	0	0	0	0
	0520-Equipment (TPB)	0	5,000	5,000	5,000	5,000
Honeycroft WW (15-0670) Total		**7,800**	**5,000**	**5,000**	**5,000**	**85,000**
Kidder Twp - Lake Harmony - 0892	0118-Gravity Mains Sewer (SC)	200,000	60,000	600,000	0	0
	0150-Contributions in Aid of Constr	-6,550	0	0	0	0
	0305-New Services	20,000	15,000	10,000	10,000	10,000
	0310-Renewal Services-Regular (SC)	15,000	15,000	15,000	15,000	15,000
	0510-Automated Distr Controls	45,000	0	0	0	0
	0512-Treatment Plants	1,419,705	320,000	55,000	220,000	2,520,000
	0515-Improvements Other (TPB) (NS)	0	0	0	0	0
	0516-Pumping Equipment Sewer (NS)	12,500	10,000	10,000	10,000	10,000
	0520-Equipment (TPB)	20,000	15,000	10,000	10,000	10,000
	0705-Fence Replacements	0	10,000	0	0	25,000
Kidder Twp - Lake Harmony - 0892 Total		**1,725,655**	**445,000**	**700,000**	**265,000**	**2,590,000**
Laurel Lakes (Wilbar) Sewer	0118-Gravity Mains Sewer (SC)	0	0	0	50,000	500,000
	0305-New Services	7,500	7,500	7,500	7,500	7,500
	0310-Renewal Services-Regular (SC)	30,000	20,000	15,000	10,000	10,000
	0512-Treatment Plants	16,805	212,500	4,312,500	12,500	12,500
	0515-Improvements Other (TPB) (NS)	5,000	5,000	5,000	5,000	5,000
	0516-Pumping Equipment Sewer (NS)	5,000	5,000	5,000	5,000	5,000
	0520-Equipment (TPB)	7,500	7,500	7,500	7,500	7,500
	0705-Fence Replacements	50,000	0	0	0	0
Laurel Lakes (Wilbar) Sewer Total		**121,805**	**257,500**	**4,352,500**	**97,500**	**547,500**

Aqua PA Wastewater, Inc. - Planned Investments 2021 - 2025

Response to OCA-VIII-31

DEPT DESCRIPTION	PROJECT GROUP	Values 2021	2022	2023	2024	2025
Limerick WW (15-690)	0117-Forced Mains Sewer (SC)	41,000	0	0	0	0
	0118-Gravity Mains Sewer (SC)	77,500	350,000	350,000	310,000	100,000
	0510-Automated Distr Controls	150,000	0	0	0	0
	0511-Improvements Other(TPB) (SC)	13,000	175,000	850,000	310,000	100,000
	0512-Treatment Plants	249,987	140,000	1,865,000	315,000	270,000
	0518-Pumping Equipment Sewer (SC)	8,500	0	0	0	0
	0520-Equipment (TPB)	913	0	0	0	0
	0615-Lab Equipment (Lt)	10,000	10,000	10,000	10,000	10,000
	0720-Improvements	24,000	0	0	32,000	0
	0761-Power Generation Equip (SC)	11,400	0	0	0	0
	0900-Information System Expenditure	10,000	0	0	0	0
	0902-Safety	7,700	0	0	15,000	0
	0911-Security	3,000	0	0	0	0
Limerick WW (15-690) Total		**607,000**	**675,000**	**3,075,000**	**992,000**	**480,000**
Links of Gettysburg	0118-Gravity Mains Sewer (SC)	17,235	35,000	407,500	7,500	7,500
	0310-Renewal Services-Regular (SC)	5,000	5,000	2,500	2,500	2,500
	0512-Treatment Plants	41,505	0	200,000	14,000	0
	0515-Improvements Other (TPB) (NS)	2,576	70,000	30,000	30,000	30,000
	0516-Pumping Equipment Sewer (NS)	22,627	0	0	0	0
	0799-Other Building/Maintnence Work	1,296	0	0	0	0
	0810-Mechanical Equipment	2,908	0	0	0	0
	0902-Safety	873	0	0	0	0
Links of Gettysburg Total		**94,020**	**110,000**	**640,000**	**54,000**	**40,000**
Little Washington	0118-Gravity Mains Sewer (SC)	0	50,000	0	0	0
	0512-Treatment Plants	1,600,000	700,000	1,000,000	100,000	550,000
	0516-Pumping Equipment Sewer (NS)	0	0	0	75,000	75,000
	0520-Equipment (TPB)	0	32,800	32,800	32,800	32,800
	0902-Safety	20,000	0	0	0	0
Little Washington Total		**1,620,000**	**782,800**	**1,032,800**	**207,800**	**657,800**
Mast Hope Sewer (Waymart)	0117-Forced Mains Sewer (SC)	4,000	4,000	4,000	4,000	4,000
	0118-Gravity Mains Sewer (SC)	301,000	1,000	71,000	701,000	1,000
	0211-Flow Measuring Devices Sewer	5,500	5,500	5,500	5,500	5,500
	0305-New Services	50,000	50,000	50,000	50,000	50,000
	0310-Renewal Services-Regular (SC)	18,500	18,500	18,500	18,500	18,500
	0510-Automated Distr Controls	80,000	0	0	0	0
	0511-Improvements Other(TPB) (SC)	1,700	0	0	0	0
	0512-Treatment Plants	198,700	340,000	490,000	3,010,000	3,010,000
	0515-Improvements Other (TPB) (NS)	800	2,500	2,500	2,500	2,500
	0516-Pumping Equipment Sewer (NS)	106,000	56,000	6,000	6,000	6,000
	0518-Pumping Equipment Sewer (SC)	28,000	28,000	158,000	1,328,000	148,000
	0520-Equipment (TPB)	2,300	10,500	10,500	10,500	10,500
	0525-Tanks/Resvrs/Standpipes	5,000	0	0	0	0
	0705-Fence Replacements	2,500	2,500	2,500	2,500	2,500
	0905-Retirements W/O Replacement	0	0	20,000	200,000	0
Mast Hope Sewer (Waymart) Total		**804,000**	**518,500**	**838,500**	**5,338,500**	**3,258,500**
Media	0117-Forced Mains Sewer (SC)	960,000	0	0	0	0
	0118-Gravity Mains Sewer (SC)	200,000	50,000	200,000	200,000	600,000
	0211-Flow Measuring Devices Sewer	7,015	0	0	0	0
	0305-New Services	50,000	50,000	50,000	50,000	50,000
	0511-Improvements Other(TPB) (SC)	25,000	25,000	25,000	25,000	25,000
	0512-Treatment Plants	8,000,000	0	0	0	0
	0515-Improvements Other (TPB) (NS)	7,000	0	0	0	0
	0520-Equipment (TPB)	50,000	0	0	0	25,000
	0761-Power Generation Equip (SC)	0	0	0	20,000	200,000
	0810-Mechanical Equipment	0	55,000	0	0	0
Media Total		**9,299,015**	**180,000**	**275,000**	**295,000**	**900,000**
New Daleville	0118-Gravity Mains Sewer (SC)	0	0	0	0	50,000
	0515-Improvements Other (TPB) (NS)	1,500,000	0	0	200,000	150,000
	0520-Equipment (TPB)	6,248	10,000	10,000	10,000	40,000
	0740-Effluent Disposal System	5,632	0	0	0	0

Aqua PA Wastewater, Inc. - Planned Investments 2021 - 2025

Response to OCA-VIII-31

DEPT DESCRIPTION	PROJECT GROUP	Values 2021	2022	2023	2024	2025
New Daleville	0902-Safety	6,200	0	0	0	0
New Daleville Total		**1,518,080**	**10,000**	**10,000**	**210,000**	**240,000**
New Garden WW-15-0680	0111-Force Mains Sewer (NS)	200,000	0	0	0	0
	0118-Gravity Mains Sewer (SC)	40,000	100,000	100,000	100,000	100,000
	0211-Flow Measuring Devices Sewer	65,500	0	0	0	0
	0305-New Services	0	25,000	25,000	25,000	25,000
	0511-Improvements Other(TPB) (SC)	218,500	200,000	0	0	0
	0512-Treatment Plants	0	0	0	0	0
	0515-Improvements Other (TPB) (NS)	26,918	0	0	0	0
	0518-Pumping Equipment Sewer (SC)	0	150,000	100,000	130,000	400,000
	0520-Equipment (TPB)	28,332	0	0	0	0
	0720-Improvements	0	10,000	0	0	0
	0740-Effluent Disposal System	90,000	125,000	125,000	525,000	0
	0761-Power Generation Equip (SC)	0	30,000	300,000	230,000	500,000
	0902-Safety	0	0	0	0	0
New Garden WW-15-0680 Total		**669,250**	**640,000**	**650,000**	**1,010,000**	**1,025,000**
Newlin Greene	0515-Improvements Other (TPB) (NS)	0	0	0	0	0
	0516-Pumping Equipment Sewer (NS)	0	70,000	70,000	70,000	0
	0520-Equipment (TPB)	8,120	10,000	10,000	10,000	10,000
Newlin Greene Total		**8,120**	**80,000**	**80,000**	**80,000**	**10,000**
Peddlers View	0118-Gravity Mains Sewer (SC)	50,000	0	0	0	0
	0512-Treatment Plants	200,000	550,000	75,000	0	0
	0515-Improvements Other (TPB) (NS)	0	0	0	0	0
	0516-Pumping Equipment Sewer (NS)	6,041	0	50,000	0	0
	0520-Equipment (TPB)	26,759	32,800	32,800	32,800	32,800
	0740-Effluent Disposal System	35,000	0	0	0	200,000
	0905-Retirements W/O Replacement	0	0	0	0	0
Peddlers View Total		**317,800**	**582,800**	**157,800**	**32,800**	**232,800**
Penn Township - 0894	0118-Gravity Mains Sewer (SC)	191,004	100,000	100,000	100,000	100,000
	0150-Contributions in Aid of Constr	-20,600	0	0	0	0
	0305-New Services	13,200	25,000	25,000	25,000	25,000
	0511-Improvements Other(TPB) (SC)	0	200,000	0	0	0
	0512-Treatment Plants	840,000	3,200,000	2,000,000	1,000,000	0
	0516-Pumping Equipment Sewer (NS)	767,593	150,000	0	0	0
	0518-Pumping Equipment Sewer (SC)	3,100	0	0	0	0
	0520-Equipment (TPB)	1,152	0	0	0	30,000
	0760-Power Generation Equip (NS)	3,951	0	0	0	0
Penn Township - 0894 Total		**1,799,400**	**3,675,000**	**2,125,000**	**1,125,000**	**155,000**
Pinecrest	0117-Forced Mains Sewer (SC)	2,000	2,000	2,000	2,000	2,000
	0118-Gravity Mains Sewer (SC)	500	40,500	400,500	500	500
	0211-Flow Measuring Devices Sewer	2,700	2,700	2,700	2,700	2,700
	0305-New Services	5,000	5,000	5,000	5,000	5,000
	0310-Renewal Services-Regular (SC)	3,200	3,200	3,200	3,200	3,200
	0512-Treatment Plants	39,500	50,000	55,000	505,000	3,505,000
	0515-Improvements Other (TPB) (NS)	1,200	1,200	1,200	1,200	1,200
	0516-Pumping Equipment Sewer (NS)	5,700	103,000	208,000	1,053,000	3,000
	0518-Pumping Equipment Sewer (SC)	11,300	14,000	14,000	14,000	14,000
	0520-Equipment (TPB)	5,200	5,200	5,200	5,200	5,200
	0525-Tanks/Resvrs/Standpipes	5,000	0	0	0	0
	0705-Fence Replacements	1,200	1,200	1,200	1,200	1,200
Pinecrest Total		**82,500**	**228,000**	**698,000**	**1,593,000**	**3,543,000**
Plumsock	0118-Gravity Mains Sewer (SC)	0	0	0	0	0
	0511-Improvements Other(TPB) (SC)	100,000	0	0	0	0
	0515-Improvements Other (TPB) (NS)	0	0	0	0	750,000
	0518-Pumping Equipment Sewer (SC)	8,937	0	0	0	0
	0520-Equipment (TPB)	63	9,000	9,000	9,000	9,000
Plumsock Total		**109,000**	**9,000**	**9,000**	**9,000**	**759,000**
Rivercrest	0118-Gravity Mains Sewer (SC)	0	0	0	0	250,000
	0510-Automated Distr Controls	10,000	0	0	0	0
	0512-Treatment Plants	346,450	30,000	1,815,000	1,605,000	5,000

Aqua PA Wastewater, Inc. - Planned Investments 2021 - 2025

Response to OCA-VIII-31

DEPT DESCRIPTION	PROJECT GROUP	Values 2021	2022	2023	2024	2025
Rivercrest	0516-Pumping Equipment Sewer (NS)	7,500	7,500	7,500	2,000	2,000
	0520-Equipment (TPB)	12,500	12,500	12,500	5,000	5,000
	0615-Lab Equipment (Lt)	1,025	0	0	0	0
Rivercrest Total		**377,475**	**50,000**	**1,835,000**	**1,612,000**	**262,000**
Sage Hill	0118-Gravity Mains Sewer (SC)	0	0	50,000	0	0
	0512-Treatment Plants	0	106,700	0	0	81,000
	0520-Equipment (TPB)	0	8,000	8,000	8,000	8,000
	0740-Effluent Disposal System	8,000	0	0	0	0
	0760-Power Generation Equip (NS)	20,000	0	0	0	0
Sage Hill Total		**28,000**	**114,700**	**58,000**	**8,000**	**89,000**
Stoney Creek Farms	0118-Gravity Mains Sewer (SC)	0	0	0	0	0
	0515-Improvements Other (TPB) (NS)	580,000	50,000	0	0	0
	0520-Equipment (TPB)	20,000	220,000	20,000	220,000	20,000
Stoney Creek Farms Total		**600,000**	**270,000**	**20,000**	**220,000**	**20,000**
The Greens at Penn Oaks	0118-Gravity Mains Sewer (SC)	0	0	0	50,000	0
	0512-Treatment Plants	0	0	0	160,000	0
	0515-Improvements Other (TPB) (NS)	200,000	0	0	0	0
	0520-Equipment (TPB)	8,000	8,000	8,000	8,000	8,000
The Greens at Penn Oaks Total		**208,000**	**8,000**	**8,000**	**218,000**	**8,000**
Thornhurst	0117-Forced Mains Sewer (SC)	15,000	15,000	15,000	15,000	15,000
	0118-Gravity Mains Sewer (SC)	0	0	0	40,000	400,000
	0305-New Services	10,000	0	0	0	0
	0310-Renewal Services-Regular (SC)	20,000	20,000	20,000	20,000	20,000
	0512-Treatment Plants	608,760	3,425,000	15,000	7,500	7,500
	0515-Improvements Other (TPB) (NS)	5,000	5,000	5,000	5,000	5,000
	0516-Pumping Equipment Sewer (NS)	5,000	5,000	5,000	5,000	5,000
	0520-Equipment (TPB)	12,500	0	0	0	12,500
	0615-Lab Equipment (Lt)	7,725	0	0	0	0
Thornhurst Total		**683,985**	**3,470,000**	**60,000**	**92,500**	**465,000**
Tobyhanna WW (15-0897)	0118-Gravity Mains Sewer (SC)	50,000	500,000	0	450,000	500,000
	0305-New Services	25,000	25,000	25,000	25,000	25,000
	0310-Renewal Services-Regular (SC)	7,500	7,500	7,500	7,500	7,500
	0512-Treatment Plants	8,965	5,000	5,000	155,000	1,505,000
	0515-Improvements Other (TPB) (NS)	65,000	5,000	5,000	5,000	5,000
	0516-Pumping Equipment Sewer (NS)	20,000	20,000	20,000	20,000	20,000
	0518-Pumping Equipment Sewer (SC)	20,000	20,000	20,000	20,000	20,000
	0520-Equipment (TPB)	15,000	5,000	5,000	5,000	15,000
	0615-Lab Equipment (Lt)	0	0	5,000	5,000	5,000
	0911-Security	0	10,000	0	0	0
Tobyhanna WW (15-0897) Total		**211,465**	**597,500**	**92,500**	**692,500**	**2,102,500**
Treasure Lake Sewer (15-0893)	0112-Gravity Mains Sewer (NS)	0	0	0	0	0
	0118-Gravity Mains Sewer (SC)	204,000	135,000	280,000	460,000	310,000
	0135-Valve Replacements (NS)	6,000	0	0	0	0
	0305-New Services	25,000	50,000	50,000	40,000	40,000
	0310-Renewal Services-Regular (SC)	10,000	10,000	10,000	10,000	10,000
	0510-Automated Distr Controls	0	0	0	0	0
	0512-Treatment Plants	35,000	240,000	900,000	0	0
	0515-Improvements Other (TPB) (NS)	105,000	20,000	35,000	35,000	35,000
	0516-Pumping Equipment Sewer (NS)	4,500	0	0	0	0
	0518-Pumping Equipment Sewer (SC)	125,000	0	0	0	0
	0520-Equipment (TPB)	7,500	20,000	20,000	20,000	20,000
	0902-Safety	0	0	0	0	0
Treasure Lake Sewer (15-0893) Total		**522,000**	**475,000**	**1,295,000**	**565,000**	**415,000**
Twin Hills	0118-Gravity Mains Sewer (SC)	40,000	40,000	40,000	40,000	0
	0512-Treatment Plants	1,035,000	200,000	0	0	0
	0515-Improvements Other (TPB) (NS)	0	0	10,000	300,000	0
	0520-Equipment (TPB)	41,000	41,000	41,000	41,000	41,000
Twin Hills Total		**1,116,000**	**281,000**	**91,000**	**381,000**	**41,000**
Valley Creek Trunk WW - 0693	0112-Gravity Mains Sewer (NS)	0	0	199,200	449,200	0
	0599-Other (TPB)	0	100,000	250,000	0	0

Aqua PA Wastewater, Inc. - Planned Investments 2021 - 2025

Response to OCA-VIII-31

DEPT DESCRIPTION	PROJECT GROUP	Values 2021	2022	2023	2024	2025
Valley Creek Trunk WW - 0693	0720-Improvements	850,000	900,000	0	0	0
Valley Creek Trunk WW - 0693 Total		**850,000**	**1,000,000**	**449,200**	**449,200**	**0**
Village at Valley Forge	0150-Contributions in Aid of Constr	-26,600	0	0	0	0
	0518-Pumping Equipment Sewer (SC)	20,000	4,000	4,000	4,000	4,000
Village at Valley Forge Total		**-6,600**	**4,000**	**4,000**	**4,000**	**4,000**
Washington Park WW	0118-Gravity Mains Sewer (SC)	0	0	0	0	0
	0512-Treatment Plants	157,000	10,000	10,000	10,000	10,000
	0516-Pumping Equipment Sewer (NS)	5,000	5,000	5,000	5,000	5,000
	0520-Equipment (TPB)	8,310	4,000	4,000	4,000	4,000
	0911-Security	0	0	10,000	0	0
Washington Park WW Total		**170,310**	**19,000**	**29,000**	**19,000**	**19,000**
Wastewater Administration	0118-Gravity Mains Sewer (SC)	0	100,000	100,000	100,000	100,000
	0510-Automated Distr Controls	35,000	200,000	400,000	400,000	400,000
	0512-Treatment Plants	100,000	0	0	0	0
	0516-Pumping Equipment Sewer (NS)	100,000	100,000	100,000	100,000	100,000
	0518-Pumping Equipment Sewer (SC)	0	200,000	200,000	200,000	200,000
	0615-Lab Equipment (Lt)	50,000	30,000	50,000	50,000	50,000
	0705-Fence Replacements	20,200	10,000	20,600	20,800	21,000
	0720-Improvements	0	200,000	0	0	0
	0805-New Vehicles	120,000	115,000	135,000	214,000	176,000
	0810-Mechanical Equipment	28,500	0	0	0	0
	0900-Information System Expenditure	422,000	422,000	0	0	0
	0902-Safety	313,000	381,000	300,000	200,000	400,000
	0911-Security	100,000	100,000	100,000	100,000	100,000
Wastewater Administration Total		**1,288,700**	**1,858,000**	**1,405,600**	**1,384,800**	**1,547,000**
Whitehaven Waste Water	0118-Gravity Mains Sewer (SC)	50,000	105,000	1,575,000	475,000	175,000
	0211-Flow Measuring Devices Sewer	15,000	15,000	15,000	15,000	15,000
	0305-New Services	20,000	7,500	7,500	7,500	7,500
	0510-Automated Distr Controls	155,000	0	0	0	0
	0512-Treatment Plants	49,900	257,500	57,500	137,500	757,500
	0515-Improvements Other (TPB) (NS)	35,000	245,000	5,000	5,000	5,000
	0516-Pumping Equipment Sewer (NS)	10,000	70,000	10,000	10,000	10,000
	0518-Pumping Equipment Sewer (SC)	15,000	15,000	15,000	15,000	15,000
	0520-Equipment (TPB)	12,000	12,000	12,000	12,000	12,000
	0760-Power Generation Equip (NS)	10,000	10,000	10,000	10,000	10,000
	0902-Safety	0	100,000	0	0	0
	0911-Security	10,000	0	0	0	0
Whitehaven Waste Water Total		**381,900**	**837,000**	**1,707,000**	**687,000**	**1,007,000**
Woodloch Pines (WAYMART)	0511-Improvements Other(TPB) (SC)	50,000	0	0	0	0
	0516-Pumping Equipment Sewer (NS)	0	40,000	0	0	0
	0518-Pumping Equipment Sewer (SC)	10,000	10,000	10,000	10,000	10,000
Woodloch Pines (WAYMART) Total		**60,000**	**50,000**	**10,000**	**10,000**	**10,000**
Woodloch Springs (WAYMART)	0112-Gravity Mains Sewer (NS)	0	0	0	0	0
	0117-Forced Mains Sewer (SC)	2,000	2,000	2,000	2,000	2,000
	0118-Gravity Mains Sewer (SC)	20,500	450,500	500	500	500
	0211-Flow Measuring Devices Sewer	2,700	2,700	2,700	2,700	2,700
	0305-New Services	2,500	2,500	2,500	2,500	2,500
	0310-Renewal Services-Regular (SC)	3,200	3,200	3,200	3,200	3,200
	0512-Treatment Plants	25,800	0	1,000,000	0	200,000
	0515-Improvements Other (TPB) (NS)	3,800	26,000	26,000	13,500	13,500
	0516-Pumping Equipment Sewer (NS)	3,000	3,000	3,000	3,000	3,000
	0520-Equipment (TPB)	251,600	1,005,200	5,200	5,200	5,200
	0705-Fence Replacements	1,200	1,200	1,200	1,200	1,200
Woodloch Springs (WAYMART) Total		**316,300**	**1,496,300**	**1,046,300**	**33,800**	**233,800**
Grand Total		**30,473,609**	**24,825,398**	**36,996,982**	**29,982,800**	**33,537,510**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Direct Testimony, OCA Statement 7, 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: November 10, 2021 Signature: _____
*319614 Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

OCA STATEMENT 4 SUPP.

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	**)**	
v.	**)**	**Docket No. R-2021-3027385**
Aqua Pennsylvania, Inc.	**)**	**Docket No. R-2021-3027386**
Aqua Pennsylvania Wastewater, Inc.	**)**	

SUPPLEMENTAL DIRECT TESTIMONY

OF

GLENN A. WATKINS

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

NOVEMBER 19, 2021

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Glenn A. Watkins. My business address is 6377 Mattawan Trail, Mechanicsville, Virginia 23116.

Q. HAVE YOU PREVIOUSLY FILED DIRECT TESTIMONY IN THIS CASE?

A. Yes. I pre-filed direct testimony in this proceeding on November 10, 2021, which was designated as OCA Statement 4.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY IN THIS PROCEEDING?

A. The Pennsylvania Office of Consumer Advocate ("OCA") requested that I review the transcripts from the public input hearings held on November 8, 9, 10, and 12, 2021 to determine if my original direct testimony should be supplemented based on the testimony of various public witnesses. As a result of my review, I am supplementing my original direct testimony on one issue: numerous concerns relating to flat wastewater rates.

Q. PLEASE SUMMARIZE THE CUSTOMER CONCERNS RELATING TO FLAT WASTEWATER RATES.

A. Several customers that own homes in Lake Harmony voiced concerns over their flat wastewater rates at the public input hearings. As noted by various witnesses, Lake Harmony is largely a vacation area in which there are a multitude of exceptionally large vacation properties with a large number of seasonal tenants. See, for example, Transcript pages 70, 112-13, 166-67, 199. A few of the witnesses are year-around Aqua wastewater customers while others are also seasonal tenants but have more modest homes with few occupants. These Lake Harmony wastewater customers testified that it is not fair for their wastewater bills to be the same as those from much larger homes with numerous occupants. Transcript pages 69-71, 112-13, 166-68, 201-04, 323-25, 439-40.

Q. BASED ON THE CONCERNS AND TESTIMONY OF THESE CUSTOMERS, DO YOU HAVE ANY RECOMMENDATIONS CONCERNING THE WASTEWATER RATES APPLICABLE TO LAKE HARMONY?

A. Yes. I recommend that Aqua be directed to begin a pilot program in Lake Harmony through which water meters will be installed on customer-owned wells, at Aqua's cost, on an opt-in basis for those customers who request metered wastewater service. These opt-in customers will be billed based on the applicable and corresponding metered rate. In addition, the Company should install water meters on customer-owned wells in the Lake Harmony service area using a random sample of 10% to 20% of all unmetered wastewater customers in the Lake Harmony service area. I estimate this would involve approximately 200-400 customers. For the random sample, these customers should continue to be billed based on the approved flat rate but should be shadow billed for research, data gathering, and recordkeeping.

Furthermore, this pilot program should be implemented as soon as practical, such that costs, usage and billing (actual and shadow) data for the pilot program customers is obtained, recorded and reported to the OCA and other parties prior to Aqua's next base rate case. I recommend that Aqua develop the pilot program within 60 days after the final order in this proceeding and provide that information to the OCA and other interested parties. Aqua and the OCA, and other interested parties could then meet within 30 days to finalize the details of the pilot, enabling it to begin within a few months of the final order in this case. In its next rate case, Aqua should propose metered wastewater rates for customers in the pilot. Also in the next base rate case, Aqua should propose to expand the metering program in Lake Harmony and other service areas where customers pay flat rates or explain why it is not taking such steps.

Q. DOES THIS COMPLETE YOUR SUPPLEMENTAL DIRECT TESTIMONY?

A. Yes.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Glenn A. Watkins, hereby state that the facts set forth in my Supplemental Direct Testimony, OCA Statement 4 Supp., 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: November 19, 2021 Signature: _____
*320139 Glenn A. Watkins

Consultant Address: Technical Associates, Inc.
6377 Mattawan Trail
P.O. Box 1690
Mechanicsville, VA 23116

OCA Statement 7 Supp.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
	:	Docket No. R-2021-3027385
v.	:	
	:	Docket No. R-2021-3027386
AQUA PA PENNSYLVANIA, INC. WATER AND WASTEWATER	:	

SUPPLEMENTAL DIRECT TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

November 19, 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 SUBMIT DIRECT TESTIMONY IN THE PROCEEDING ON BEHALF OF THE OFFICE OF CONSUMER ADVOCATE?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY?

A. To address quality of service testimony by customers at the six Public Input Hearings on November 8, 9, 10, and 12, 2021.

The Company should respond to the testimony regarding quality of service issues by customers who testified at the PIHs:

1. The customer testified that there is a high amount of particulate matter in the water that shortens the life of a hot water heater from fifteen or twenty years to seven or eight years. Tr. 62. East 4th Street, Conneaut Lake.
2. The customer testified the water is not the best quality because its ground water that has a high iron content and it's discolored at times. Tr. 148. The customer also testified that: (1) he experienced discolored water while taking a shower or flushing the toilet; (2) he is concerned about his refrigerator filter being contaminated; (3) he was advised by Aqua to run the water for about ten minutes to clear the water; and (4) he is billed for the water used to clear the discoloration on both his water and sewer bills. Tr. 150-151. Chapel Court, Downingtown.
3. The customer testified about problems with pressure reducing valves and high pressures in the village of Chesterbrook which is causing damage to people's homes. Tr. 163-164. Brandywine Lane, Chesterbrook
4. The customer is a water and wastewater customer who lives adjacent to a road going to Aqua-owned land where big water tanks are located. The customer testified that about five or six years ago the water had a strong sewer gas stench or hydrogen sulfide on hot summer afternoons, which took Aqua over 2 years to fix. The customer also testified that Aqua sprayed so much water that sometimes the water would flow down the sloping road and form puddles in the area adjoining his driveway. He stated that the puddles appeared to contain bacteria and had different color algae, and it took forever to get Aqua to do anything. Tr. 185-186. The customer also testified that a leaking copper water line inside his house caused considerable damage in 2010 and a second leaking copper water line occurred about four or five years ago, which he believes was caused by sulfur in the water. The customer also said that he has experienced constant low water pressure for over twenty years, especially

in the shower, and after many calls to Aqua the pressure has not improved. Tr. 187, 189. Equestrian Drive, New Hope.

5. The customer stated the following about problems since 2007 related to high water pressure:

The first incident occurred in 2007 when the pressure reducing valve (PRV), located in an outside frost pit failed and was repaired by the customer's plumber who tested the pressure coming into the house at over 165 pounds per square inch (psi) which is greater than the 125 psi normal operating maximum pressure. After the customer filed Informal and Formal Complaints, Aqua settled by paying $2,900 for the damages that included replacing the PRV, hot water heater, all of the faucets and shower water controls, and all the push/pull valves that were pushed out under the high pressure. Tr. 232-234;

A second incident occurred in early 2020 when the PRV again failed and had to be replaced. The pressure was 190 to 200 psi according to Aqua. After the customer filed informal and formal complaints, Aqua settled by paying $425 to cover replacing the PRV and reducing the water bill for wasted water. Tr. 234-235;

During the current rate case, the customer filed informal and formal complaints because Aqua did not return voicemail messages regarding a gasket located in the outside frost pit that was ripped apart by the high pressure that averages 190 to 200 psi. Tr. 236-237; Aqua made suggestions what the customer could do to protect his property from the high pressure such as using a higher rated PRV, installing a smaller size service line or installing two PRVs in series. Aqua did not explain if it was possible to install two PRVs in series in the outside frost pit; Tr. 238-240 and (8) the customer is aware that another Chesterbrook customer with two PRVs in series who experienced the high pressure PRV blowout. Tr. 241, 249-250. Treaty Drive, Chesterbrook.

6. The customer testified that since 1989, he has experienced and reported 32 sewer backups during storms with as little of 1 inch of rainfall. The customer also testified that sewer flows entered the home through basement plumbing fixtures, a toilet, and laundry tubs because of inadequate sewer capacity. The customer has seen some results since Aqua took ownership of his system (Cheltenham) and began making repairs. Tr. 443-444. Harrison Avenue, Glenside.

Q. DOES THIS COMPLETE YOUR WRITTEN SUPPLEMENTAL DIRECT TESTIMONY?

A. Yes, at this time.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Supplemental Direct Testimony, OCA Statement 7 Supp., 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: November 19, 2021 Signature: _____
*320140 Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

OCA STATEMENT 4R

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	**)**	
v.	**)**	**Docket No. R-2021-3027385**
Aqua Pennsylvania, Inc.	**)**	**Docket No. R-2021-3027386**
Aqua Pennsylvania Wastewater, Inc.	**)**	

REBUTTAL TESTIMONY

OF

GLENN A. WATKINS

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

DECEMBER 2, 2021

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Glenn A. Watkins. My business address is 6377 Mattawan Trail, Mechanicsville, Virginia 23116.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS CASE?

A. Yes. I pre-filed direct testimony in this proceeding on November 10, 2021, which was designated as OCA Statement 4 as well as supplemental direct testimony on November 19, 2021, which was designated as OCA Statement 4 Supp.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. The purpose of this testimony is to respond to the findings and recommendations of OSBA witness Brian Kalcic and Large Users Group ("LUG") witness Richard Baudino as they relate to the allocation of water revenue increases.

Q. BEFORE YOU DISCUSS YOUR SPECIFIC DISAGREEMENTS WITH MESSRS. KALCIC'S AND BAUDINO'S WATER REVENUE ALLOCATION RECOMMENDATIONS, PLEASE PROVIDE A SUMMARY OF EACH PARTIES' RECOMMENDED CLASS WATER REVENUE INCREASES.

A. While Messrs. Kalcic and Baudino have accepted the Company's proposed revenues associated with the transfer of Act 11 wastewater revenues to water revenues, I recommend a smaller Act 11 transfer than that proposed by Aqua. With this understanding, the following tables present a comparison of each parties' recommended class water revenue increases in absolute and relative terms:

TABLE 1
Aqua Pennsylvania
Comparison of Recommended Water Revenue Increases
($000)

Class	Present Rev	Revenue Increase			
		Aqua	OCA	OSBA	LUG
Residential	$333,854	$58,199	$51,959	$65,505	$60,971
Commercial	$119,491	$19,091	$17,044	$15,248	$16,591
Industrial	$16,630	$3,076	$2,746	$3,082	$2,984
Public	$8,517	$1,362	$1,216	$388	$1,182
Other Water Utilities	$13	$2	$2	$0	$2
Private Fire Protection	$16,154	$2,823	$2,520	$329	$2,823
Public Fire Protection	$6,439	$1,329	$1,329	$1,329	$1,329
Total Full Tariff Sales of Water	$501,097	$85,881	$76,816	$85,881	$85,881
Contract Sales	$7,263	$304	$304	$304	$304
Total Sales of Water	$508,360	$86,185	$77,120	$86,185	$86,185

TABLE 2
Aqua Pennsylvania
Comparison of Recommended Water Revenue Increases

Class	Percent Increase			
	Aqua	OCA	OSBA	LUG
Residential	17.43%	15.56%	19.62%	18.26%
Commercial	15.98%	14.26%	12.76%	13.88%
Industrial	18.49%	16.51%	18.53%	17.94%
Public	15.99%	14.28%	4.55%	13.88%
Other Water Utilities	15.88%	14.18%	0.00%	15.88%
Private Fire Protection	17.47%	15.60%	2.04%	17.47%
Public Fire Protection	20.64%	20.64%	20.64%	20.64%
Total Full Tariff Sales of Water	17.14%	15.33%	17.14%	17.14%
Contract Sales	4.18%	4.18%	4.18%	4.18%
Total Sales of Water	16.95%	15.17%	16.95%	16.95%

TABLE 3
Aqua Pennsylvania
Comparison of Recommended Water Revenue Increases

Class	Percent of System Average Increase			
	Aqua	OCA	OSBA	LUG
Residential	103%	103%	116%	108%
Commercial	94%	94%	75%	82%
Industrial	109%	109%	109%	106%
Public	94%	94%	27%	82%
Other Water Utilities	94%	93%	0%	94%
Private Fire Protection	103%	103%	12%	103%
Public Fire Protection	122%	136%	122%	122%
Total Full Tariff Sales of Water	101%	101%	101%	101%
Contract Sales	25%	28%	25%	25%
Total Sales of Water	100%	100%	100%	100%

As can be seen in Table 3 above and but for the difference between the Company's and my Act 11 revenue transfer, I have accepted the Company's revenue allocation approach for the metered classes.[1]

Q. PLEASE EXPLAIN HOW OSBA WITNESS KALCIC DEVELOPED HIS RECOMMENDED WATER REVENUE ALLOCATIONS.

A. Mr. Kalcic's overall water class revenue allocation is developed in two steps: first, he allocates the Company's overall recommended revenue increase before recognition of the Company's proposed Act 11 transfer of revenues from wastewater to water operations; second, he then accepted the Company's class Act 11 water increases.

Q. PLEASE SUMMARIZE MR. KALCIC'S RECOMMENDED WATER CLASS REVENUE ALLOCATIONS BEFORE HIS RECOGNITION OF ACT 11 INCREASES TO WATER OPERATIONS.

A. The following table provides a summary of Mr. Kalcic's water class revenue allocations before consideration of the Act 11 increases:

[1] My relative increases to Public Fire Protection and Contract Sales are larger than the Company's relative increases due to the fact that I have accepted the Company's proposed absolute levels of Public Fire Protection and Contract Sales increases ($1,329,034 and $303,705, respectively).

TABLE 4
OSBA Water Class Revenue Allocations
Before Recognition of Act 11 Increases[2]
($000)

		Before Act 11 Increase		
Class	Present Revenue	Increase	Percent Increase	Percent of System Avg. Increase
Residential	$333,854	$48,699	14.59%	113%
Commercial	$119,491	$11,309	9.46%	74%
Industrial	$16,630	$3,082	18.53%	144%
Public	$8,517	$294	3.45%	27%
Other Water Utilities	$13	$0	0.00%	0%
Private Fire Protection	$16,154	$329	2.04%	16%
Public Fire Protection	$6,439	$1,329	20.64%	161%
Total Full Tariff Sales of Water	$501,097	$65,042	12.98%	101%
Contract Sales	$7,263	$304	4.18%	33%
Total Sales of Water	$508,360	$65,345	12.85%	100%

Q. HOW DID MR. KALCIC DEVELOP HIS WATER CLASS REVENUE ALLOCATIONS BEFORE RECOGNITION OF THE ACT 11 INCREASES?

A. In response to OSBA-I-1, the Company provided what Ms. Heppenstall calculated to be each class's allocated "cost of service" at both present and proposed rates. As shown in Mr. Kalcic's Schedule BK-3W, page 2 and using the Residential class as an example, Ms. Heppenstall calculated this class's "cost of service" at present rates to be $340.163 million. Mr. Kalcic then compared Ms. Heppenstall's calculated "cost of service" to present Residential revenues of $333.854 million wherein he concluded that the Residential class is receiving a subsidy of $6.309 million ($340.163 million minus $333.854 million). Remembering that Mr. Kalcic's first step excludes Act 11 revenues at proposed rates, he then calculated each class's subsidy (or excess) by subtracting Ms. Heppenstall's allocated "cost of service" at proposed rates from Aqua's proposed revenues (excluding Act 11 transfer); e.g., for the Residential class, $375.247 million minus $382.959 million equals a $7.711 million subsidy.

Mr. Kalcic calculated each class's subsidy (or excess) based on the explanation above and then narrowed the subsidies (excesses) for each class. Mr.

[2] Calculated per Schedule BK-6W.

Kalcic's calculation of these so-called subsidies then results in his class revenue allocations before Act 11 revenue transfers shown in my Table 4.

Q. DO YOU AGREE WITH MR. KALCIC'S CALCULATIONS OF HIS SO-CALLED CLASS SUBSIDIES OR EXCESSES?

A. No.

Q. PLEASE EXPLAIN.

A. While Mr. Kalcic's representation of each class's revenues at current and Aqua proposed rates is accurate, he utilized Ms. Heppenstall's calculated "cost of service" related to sales provided in response to OSBA-I-1 (current rates) and Ms. Heppenstall's Exhibit No. 5A, Part I, Schedule A. However, Ms. Heppenstall's calculated "cost of service" contains numerous allocations that do not reflect the true profitability of classes or the cost to serve each class.

Specifically, Ms. Heppenstall's calculated "cost of service" for each class reflects the allocation of the Public Fire revenue shortfall, which is not a cost per se, but rather, simply a statutory subsidy provided to the Public Fire class. In addition, Ms. Heppenstall's calculations allocate the Company's total income taxes and achieved return (equity and debt) based on rate base not on actual revenues less expenses. Finally, with regard to Ms. Heppenstall's "cost of service" calculations at proposed rates, she has treated the Act 11 revenue transfer as an expense for each class that is allocated Act 11 water revenues. The above allocations significantly distort Mr. Kalcic's understanding of each class's profitability.

With regard to current profitability, I have calculated each class's rate of return ("ROR") and relative rate of return under two approaches: (1) excluding the allocation of the Public Fire revenue shortfall to individual classes; and, (2) including the allocation of the Public Fire revenue shortfall to individual classes. The details of these calculations are provided in my Schedule GAW-1R and are summarized below:

TABLE 5
Rates of Return At Current Rates

Class	Excluding Public Fire Revenue Shortfall ROR	Excluding Public Fire Revenue Shortfall Indexed ROR	Including Public Fire Revenue Shortfall ROR	Including Public Fire Revenue Shortfall Indexed ROR
Residential	6.92%	107%	6.18%	96%
Commercial	7.07%	110%	6.89%	107%
Industrial	6.03%	94%	5.96%	93%
Public	7.82%	122%	7.60%	118%
Other Water Utilities	101.50%	1577%	101.50%	1577%
Private Fire Protection	8.08%	125%	8.08%	125%
Public Fire Protection	-1.63%	-25%	6.26%	97%
Total Company	6.44%	100%	6.44%	100%

With regard to class profitability at Aqua's proposed rates, I have calculated each class's ROR and relative rate of return under four approaches: (1) excluding the allocation of the Public Fire revenue shortfall to individual classes; (2) excluding the Act 11 revenue transfer as an expense; (3) excluding both the Public Fire revenue shortfall and Act 11 transfer as an expense; and, (4) including the allocation of the Public Fire revenue shortfall as well as including the Act 11 revenue transfer as an expense. The results of these calculations are summarized below[3]:

TABLE 6
Rates of Return At Aqua Proposed Rates

	Excluding Public Fire Rev. Shortfall	Excluding Act 11 As Expense	Excluding Both Public Fire & Act 11	Including Both Public Fire & Act 11
Residential	107%	98%	108%	96%
Commercial	107%	103%	106%	105%
Industrial	101%	94%	95%	100%
Public	121%	113%	116%	118%
Other Water Utilities	1474%	1391%	1391%	1474%
Private Fire	127%	119%	119%	127%
Public Fire	-11%	94%	-11%	100%
Total	100%	100%	100%	100%

[3] The calculations were made to Ms. Heppenstall's water class cost of service study provided in response to I&E-RS-2-D by changing the expenses in her model.

In order to clearly see the unreasonableness of Mr. Kalcic's class revenue allocations before the Act 11 revenue transfer from wastewater to water operations, we can compare the class indexed RORs at current rates to the increases proposed by Mr. Kalcic (before the Act 11 revenue transfer) as shown in the table below:

TABLE 7
Comparison of Indexed RORs at Current Rates
And OSBA Water Revenue Allocation
(Before Act 11 Revenue Transfer)

	Indexed ROR			
Class	Excluding Public Fire Revenue Shortfall	Including Public Fire Revenue Shortfall	Kalcic Percent Increase	Percent Of Sys. Average Increase
Residential	107%	96%	14.59%	113%
Commercial	110%	107%	9.46%	74%
Industrial	94%	93%	18.53%	144%
Public	122%	118%	3.45%	27%
Other Water Utilities	1577%	1577%	0.00%	0%
Private Fire Protection	125%	125%	2.04%	16%
Public Fire Protection	-25%	97%	20.64%	161%
Total Full Tariff Sales	100%	100%	12.98%	101%
Contract Sales	--	--	4.18%	33%
Total Sales of Water	--	--	12.85%	100%

As can be seen above, even though the Residential class is currently earning close to parity with indexed RORs of 96% to 107%, Mr. Kalcic's proposal would increase this class's revenue responsibility by 113% of the system average percentage increase. At the same time, the Commercial class is also earning close to parity with indexed RORs between 107% and 110%, wherein he recommends this class only receive 74% of the system average percentage increase. Similarly, the indexed RORs for the Industrial class are also reasonably close to parity in the range of 93% to 94% while he recommends that this class receive 144% of the system average percentage increase.

To further illustrate the unreasonableness of Mr. Kalcic's revenue allocation (before consideration of the Act 11 revenue transfer), consider the movement in indexed RORs under Aqua's proposed revenues:

TABLE 8
Aqua Water Current & Proposed Indexed RORs

Class	Indexed RORs	
	Current Rates	Aqua Proposed Rates
Residential	96% - 107%	96% - 108%
Commercial	107% - 110%	103% - 107%
Industrial	93% - 94%	94% - 101%
Public	118% - 122%	113% - 121%
Other Water Utilities	1577%	1391% - 1474%
Private Fire Protection	125%	119% - 127%
Public Fire Protection	-25% - 97%	-11% - 100%
Total Full Tariff Sales	100%	100%

Given the complexities associated with Aqua's gradual movement of various divisions to a state-wide rate, the Public Fire revenue subsidy required by statute, coupled with an Act 11 revenue subsidy provided to wastewater operations, the above table indicates that Aqua's proposed class revenue allocations are reasonable and that Mr. Kalcic's calculated so-called "subsidies" at current and proposed rates are misnomers.

Q. YOU INDICATED THAT MR. KALCIC HAS ACCEPTED THE COMPANY'S CLASS REVENUE ALLOCATIONS ASSOCIATED WITH THE ACT 11 TRANSFER OF REVENUES FROM WASTEWATER TO WATER OPERATIONS. HAVE YOU CALCULATED THE CLASS PERCENTAGES OF THE ACT 11 REVENUE TRANSFERS?

A. Yes. The following table shows the Act 11 water revenue increases as a percentage of current revenues and Aqua proposed revenues:

TABLE 9
Aqua Proposed Act 11 Water Transfer Revenues

Class	Aqua Act 11 Transfer	Present Revenue	Aqua Proposed Revenue	Act 11 Percent of Revenue Present Revenue	Act 11 Percent of Revenue Proposed Revenue
Residential	$16,806,100	$333,854,297	$392,053,234	5.03%	4.29%
Commercial	$3,939,400	$119,491,326	$138,581,853	3.30%	2.84%
Industrial	$528	$16,630,075	$19,705,804	0.00%	0.00%
Public	$93,398	$8,516,664	$9,878,839	1.10%	0.95%
Other Water Utilities	$0	$12,812	$14,846	0.00%	0.00%
Private Fire Protection	$0	$16,153,537	$18,976,135	0.00%	0.00%
Public Fire Protection	$0	$6,438,592	$7,767,626	0.00%	0.00%
Total Full Tariff Sales	$20,839,425	$501,097,303	$586,978,336	4.16%	3.55%
Contract Sales	$0	$7,262,995	$7,566,700	0.00%	0.00%
Total Sales of Water	$20,839,425	$508,360,298	$594,545,037	4.10%	3.51%

Q. ARE THE CLASS ACT 11 REVENUE TRANSFER PERCENTAGES PARTICULARLY RELEVANT AS IT RELATES TO MR. KALCIC'S OVERALL CLASS REVENUE ALLOCATIONS?

A. Yes. As can be seen in Table 9, the Residential class is assigned a larger relative percentage of Act 11 revenues than the system average while the Commercial class is assigned significantly less than the system average and the Industrial class is assigned no Act 11 revenue transfer responsibility.

Remembering that the Residential, Commercial, and Industrial class indexed RORs are all reasonably close to unity, when Mr. Kalcic's initial class revenue allocations (before the Act 11 revenue transfer) are combined with the Act 11 revenue increases, we see that Mr. Kalcic's ultimate recommendation defies logic and unreasonably favors the Commercial class as shown in the table below:

TABLE 10
OSBA Proposed Class Increases and Indexed RORs at Current Rates

Class	OSBA Proposed ($000) Before Act 11 Increase	Act 11 Increase	Total Increase	Percent Increase	Indexed ROR Current Rates
Residential	$48,699	$16,806.1	$65,505	19.62%	96% - 107%
Commercial	$11,309	$3,939.4	$15,248	12.76%	107% - 110%
Industrial	$3,082	$0.5	$3,082	18.53%	93% - 94%
Public	$294	$93.4	$388	4.55%	118% - 122%
Other Water Utilities	$0	$0	$0	0.00%	1577%
Private Fire Protection	$329	$0	$329	2.04%	125%
Public Fire Protection	$1,329	$0	$1,329	20.64%	-25% - 97%
Total Full Tariff Sales	$65,042	$20,839.4	$85,881	17.14%	100%
Contract Sales	$304	$0	$304	4.18%	--
Total Sales of Water	$65,345	$20,839.4	$86,185	16.95%	--

Q. DOES MR. KALCIC PROVIDE ANY RATIONALE FOR ACCEPTING AQUA'S PROPOSED CLASS REVENUE ALLOCATIONS RELATING TO THE ACT 11 REVENUE TRANSFER FROM WASTEWATER TO WATER OPERATIONS?

A. Yes. On pages 17 and 18 of his direct testimony, Mr. Kalcic explains that the Act 11 subsidy provided to Residential wastewater customers should be recovered from Residential water customers and the Act 11 subsidy provided to non-Residential wastewater customers should be recovered from non-Residential water customers. Mr. Kalcic then concluded that Aqua's Act 11 allocation methodology properly recovers wastewater subsidies from water customers on a revenue neutral basis by customer class.

Q. DO YOU AGREE WITH MR. KALCIC'S RATIONALE AND LOGIC CONCERNING THE ALLOCATION OF ACT 11 CLASS REVENUE ALLOCATIONS?

A. Not entirely. While I have no objection to the Company's methodology to ultimately allocate Act 11 revenues, given the diversity and multitude of water vs. wastewater customers, it cannot be said that a particular class of water customers

should exactly subsidize the same class of wastewater customers. This is true because there are 415,059 Aqua non-fire water customers and only 63,869 wastewater customers.[4] As a result, most water customers do not rely upon Aqua's wastewater operations. Furthermore, the customer mix across divisions or operating areas also varies considerably as shown in the table below:

TABLE 11
Distribution of Water and Wastewater Customers

	Number of Customers		Percent of Customers	
	Residential	Non-Residential	Residential	Non-Residential
Water (Non-Fire)	390,731	24,328	94.14%	5.86%
Wastewater				
Legacy	15,857	1,726	90.18%	9.82%
Limerick	5,598	1,855	75.11%	24.89%
East Bradford	14,487	416	97.21%	2.79%
Cheltenham	9,817	7,036	58.25%	41.75%
East Norriton	4,601	361	92.72%	7.28%
New Garden	1,916	199	90.59%	9.41%

Q. WHAT ARE YOUR CONCLUSIONS REGARDING MR. KALCIC'S WATER CLASS REVENUE ALLOCATIONS?

A. Given the complexities of this case, including: the gradual movement towards state-wide rates, the statutory Public Fire subsidy requirement, the impact of Act 11 revenue shifting between water and wastewater operations, and differences in the mix of customer classes across various divisions and operating areas, it is my opinion that the total increases proposed for water are most relevant (before Act 11 increase plus Act 11 increase). In this regard, Mr. Kalcic's recommended total class water increases are unreasonable and should not be given any weight.

Q. PLEASE EXPLAIN LUG WITNESS BAUDINO'S BASIS FOR HIS RECOMMENDED WATER CLASS REVENUE ALLOCATIONS.

A. Mr. Baudino claims that there has been little movement in relative (indexed) RORs from the last case to the current case as well as little movement under Aqua's

[4] Per Aqua Exhibit 5-A, Part I and Exhibit 5-B, Part I (witness Constance Heppenstall's cost of service studies).

proposed revenue allocations. As a result, Mr. Baudino recommends more class movement to parity. Specifically, Mr. Baudino accepted Aqua's class cost of service study and recommends the following movement in indexed RORs:

Residential move from 96% to 98%;

Commercial move from 107% to 102%;

Industrial move from 93% to 99%; and,

Public Authority move from 118% to 115%.

Mr. Baudino's recommended movements result in the water class increases shown in my Table 1.

Q. DO YOU AGREE WITH MR. BAUDINO'S WATER CLASS REVENUE ALLOCATIONS?

A. No. Mr. Baudino is splitting hairs with regard to the relationship between imprecise cost allocations and his recommended class revenue increases. Mr. Baudino's recommendations do not consider the many other complexities of this case that were discussed in my rebuttal to OSBA witness Kalcic. As a result, I conclude that Aqua's methodology to allocate class revenues is most appropriate.

Q. DO YOU HAVE ANY FINAL COMMENTS REGARDING THE APPROACHES AND RECOMMENDATIONS OF OSBA AND LUG AS IT RELATES TO WATER CLASS REVENUE RESPONSIBILITY?

A. Yes. Both Mr. Kalcic and Mr. Baudino have made their recommendations based on assumptions that the Company's class cost of service studies are surgically precise. Virtually all experts agree that class cost allocations are simply approximations. Indeed, the U.S. Supreme Court has shared this view and opined in an important regulatory case involving Colorado Interstate Gas Company and the Federal Power Commission (predecessor to FERC) wherein the Courts stated:

> But where, as here, several classes of services have a common use of the same property, difficulties of separation are obvious. Allocation of

> costs is not a matter for the slide-rule. It involves judgment on a myriad of facts. It has no claim to an exact science.[5]

As a result, I have concluded that Aqua's methodology to assign water class revenue increases is reasonable.

Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?

A. Yes.

[5] Colorado Interstate Gas Co. v. Federal Power Commission, 324 U.S. 581, 589, 65 S. Ct. 829, 833 (1945).

AQUA PENNSYLVANIA, INC.
Water Class Cost of Service

	Account Description	Source	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities	Private Fire Protection	Public Fire Protection
	AQUA (HEPPENSTALL) CALCULATED "COST OF SERVICE" AT CURRENT RATES									
(1)	Sales Revenue		$501,097,303	$333,854,297	$119,491,326	$16,630,075	$8,516,664	$12,812	$16,153,537	$6,438,592
(2)	Other Revenue		$8,581,387	$5,823,535	$1,971,625	$297,465	$132,840	$43	$239,549	$116,329
(3)	Total Revenue	(1) + (2)	$509,678,691	$339,677,833	$121,462,951	$16,927,540	$8,649,504	$12,855	$16,393,086	$6,554,921
(4)	O&M Expenses (Incl. Reallocation of Pub. Fire)	OSBA-I-1	$116,492,928	$83,446,046	$22,085,137	$3,331,589	$1,485,111	$911	$2,103,134	$4,041,000
(5)	Depreciation Expenses	OSBA-I-1	$122,166,578	$78,274,997	$27,943,587	$4,244,188	$1,879,033	$599	$3,334,041	$6,490,131
(6)	Taxes Other Than Income	OSBA-I-1	$12,279,861	$8,037,716	$2,749,800	$413,931	$185,171	$65	$347,407	$545,772
(7)	Heppenstall Income Taxes	Alloc Rate Base	$12,978,397	$7,920,184	$3,131,713	$479,123	$209,731	$39	$422,369	$815,238
(8)	Return	Alloc Rate Base	$245,760,927	$149,977,818	$59,302,603	$9,072,756	$3,971,497	$737	$7,998,044	$15,437,473
(9)	Heppenstall Cost of Service	Sum of (4) thru (8)	$509,678,691	$327,656,760	$115,212,840	$17,541,588	$7,730,543	$2,351	$14,204,995	$27,329,614
(10)	Less: Contract & Other Revenues	OSBA-I-1	($8,581,386)	($5,823,535)	($1,971,625)	($297,465)	($132,840)	($43)	($239,549)	($116,329)
(11)	Plus: Unrecovered Public Fire	Alloc Meter Equivalents	$0	$18,329,669	$1,749,744	$100,860	$150,222	$0	$0	($20,330,494)
(12)	**Heppenstall Cost of Service Related to Sales**	**(9) + (10) + (11)**	**$501,097,305**	**$340,162,894**	**$114,990,959**	**$17,344,983**	**$7,747,925**	**$2,308**	**$13,965,446**	**$6,882,791**
	O&M EXPENSES EXCLUDING ALLOCATION OF PUBLIC FIRE REVENUE SHORTFALL									
(13)	O&M Expenses Excl. Alloc. Of Public Fire Shortfall	(4) - (11)	$116,492,928	$83,446,046	$22,085,137	$3,331,589	$1,485,111	$911	$2,103,134	$4,041,000
(14)	Depreciation Expense	OSBA-I-1	$122,166,578	$78,274,997	$27,943,587	$4,244,188	$1,879,033	$599	$3,334,041	$6,490,131
(15)	Taxes Other Than Income	OSBA-I-1	$12,279,861	$8,037,716	$2,749,800	$413,931	$185,171	$65	$347,407	$545,772
(16)	Earnings Before Tax	(3) - (13) - (14) - (15)	$258,739,324	$169,919,074	$68,684,428	$8,937,832	$5,100,189	$11,279	$10,608,504	($4,521,982)
(17)	Taxable Exclusions	Alloc on Rate Base	$70,371,594	$42,944,899	$16,980,806	$2,597,908	$1,137,205	$211	$2,290,173	$4,420,392
(18)	Taxable Income	(16) - (17)	$188,367,730	$126,974,175	$51,703,622	$6,339,924	$3,962,984	$11,068	$8,318,331	($8,942,374)
(19)	Income Taxes	Alloc on (18)	$12,978,397	$8,748,427	$3,562,341	$436,816	$273,047	$763	$573,127	($616,123)
(20)	Net Operating Income	(16) - (19)	$245,760,927	$161,170,647	$65,122,086	$8,501,016	$4,827,142	$10,517	$10,035,377	($3,905,859)
(21)	Rate Base	OSBA-I-1	$3,818,296,027	$2,330,151,169	$921,362,821	$140,960,451	$61,701,793	$10,361	$124,263,807	$239,845,625
(22)	ROR		6.44%	6.92%	7.07%	6.03%	7.82%	101.50%	8.08%	-1.63%
(23)	**Indexed ROR**		**100%**	**107%**	**110%**	**94%**	**122%**	**1577%**	**125%**	**-25%**
	O&M EXPENSES INCLUDING ALLOCATION OF PUBLIC FIRE REVENUE SHORTFALL									
(24)	O&M Expenses Incl. Alloc. Of Public Fire Shortfall	(4)	$116,492,928	$101,775,715	$23,834,881	$3,432,449	$1,635,333	$911	$2,103,134	($16,289,494)
(25)	Depreciation Expense	OSBA-I-1	$122,166,578	$78,274,997	$27,943,587	$4,244,188	$1,879,033	$599	$3,334,041	$6,490,131
(26)	Taxes Other Than Income	OSBA-I-1	$12,279,861	$8,037,716	$2,749,800	$413,931	$185,171	$65	$347,407	$545,772
(27)	Earnings Before Tax	(3) - (24) - (25) - (26)	$258,739,324	$151,589,405	$66,934,684	$8,836,972	$4,949,967	$11,279	$10,608,504	$15,808,512
(28)	Taxable Exclusions	Alloc on Rate Base	$70,371,594	$42,944,899	$16,980,806	$2,597,908	$1,137,205	$211	$2,290,173	$4,420,392
(29)	Taxable Income	(27) - (28)	$188,367,730	$108,644,506	$49,953,878	$6,239,064	$3,812,762	$11,068	$8,318,331	$11,388,120
(30)	Income Taxes	Alloc on (29)	$12,978,397	$7,485,526	$3,441,785	$429,867	$262,696	$763	$573,127	$784,633
(31)	Net Operating Income	(27) - (30)	$245,760,927	$144,103,879	$63,492,898	$8,407,105	$4,687,271	$10,517	$10,035,377	$15,023,879
(32)	Rate Base	OSBA-I-1	$3,818,296,027	$2,330,151,169	$921,362,821	$140,960,451	$61,701,793	$10,361	$124,263,807	$239,845,625
(33)	ROR		6.44%	6.18%	6.89%	5.96%	7.60%	101.50%	8.08%	6.26%
(34)	**Indexed ROR**		**100%**	**96%**	**107%**	**93%**	**118%**	**1577%**	**125%**	**97%**

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Glenn A. Watkins, hereby state that the facts set forth in my Rebuttal Testimony, OCA Statement 4R 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: December 2, 2021 Signature: _____
*320507 Glenn A. Watkins

Consultant Address: Technical Associates, Inc.
6377 Mattawan Trail
P.O. Box 1690
Mechanicsville, VA 23116

OCA Statement 1SR

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket Nos. R-2021-3027385
	:	R-2021-3027386
Aqua Pennsylvania, Inc.	:	
Aqua Pennsylvania Wastewater, Inc.	:	

Surrebuttal Testimony of
Ralph C. Smith

on Behalf of the
Pennsylvania Office of Consumer Advocate

December 14, 2021

SURREBUTTAL TESTIMONY OF RALPH C. SMITH
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EXHIBITS:

LA-5, Updated Summary Schedules showing Revenue Requirement, Rate Base, Net Operating Income and Adjustments for the Water and Wastewater utility operations

LA-6, Updated Adjustment Schedules showing Rate Base and Net Operating Income Adjustments for the Water and Wastewater utility operations

LA-7, Selected Non-Confidential Documents Referenced in the Testimony and Exhibits LA-5 and LA-6

LA-8, Selected pages from the Essential Utilities Proxy Statement (SEC Schedule 14A) Concerning Executive Compensation Including Stock-Based Compensation

I. INTRODUCTION

Q. Please state your name, position and business address.

A. Ralph C. Smith. I am a Senior Regulatory Consultant at Larkin & Associates, PLLC, 15728 Farmington Road, Livonia, Michigan 48154.

Q. Have you previously submitted testimony in this proceeding?

A. Yes. My direct testimony concerning the rate request of Aqua Pennsylvania ("Aqua", "AP", or "Company") on behalf of the Pennsylvania Office of Consumer Advocate ("OCA") was served on November 11, 2021 and pre-marked OCA Statement 1. My qualifications were set forth in that statement.

Q. What is the purpose of your surrebuttal testimony?

A. My surrebuttal testimony responds to the rebuttal testimony of Aqua witnesses William Packer, Erin Feeney, Christopher Manning, Christopher Henkel, Constance Heppenstall, and Christine Saball on various issues.

Q. What exhibits are being filed with your surrebuttal testimony?

A. Exhibits LA-5 through LA-8 are being filed with my surrebuttal testimony.

Q. What is shown in Exhibit LA-5?

A. Exhibit LA-5 presents Updated Summary Schedules showing Revenue Requirement, Rate Base, Net Operating Income and Adjustments for the Water and Wastewater utility operations.

Q. What is shown in Exhibit LA-6?

A. Exhibit LA-6 presents Updated Adjustment Schedules showing Rate Base and Net Operating Income Adjustments for the Water and Wastewater utility operations.

Q. What is shown in Exhibit LA-7?

A. Exhibit LA-7 presents selected non-confidential documents referenced in my testimony and/or in Exhibits LA-5 and LA-6.

Q. What is shown in Exhibit LA-8?

A. Exhibit LA-8 presents selected pages from the Essential Utilities Proxy Statement (SEC Schedule 14A) concerning Executive Compensation including Stock-Based Compensation. The information in Exhibit LA-8 provides additional descriptions of the Essential Utilities stock-based compensation programs and the Supplemental Executive Retirement Plan (SERP) program and supports the recommendation I have made that the cost of those programs be borne by Essential Utilities shareholders rather than being charged to ratepayers.

Q. Has your overall Revenue Requirement recommendation changed?

A. Yes, I am presenting an updated summary of the revenue requirement excess for the Aqua PA water utility and revenue deficiencies for Aqua PA's wastewater utility operations on Exhibit LA-5, Schedule A, page 2 of 11. As shown there, in column A, line 7, the updated results show an overall net revenue excess of approximately $12 million for Aqua PA. The updated revenue excess for Aqua PA's water utility of

1 approximately $35.1 million is shown in column B, on line 7. The updated revenue
2 requirement deficiencies for each Aqua PA wastewater utility group are shown on
3 Exhibit LA-5, Schedule A, page 2 of 11, line 7, in columns C through H,
4 respectively.
5

II. OVERALL FINANCIAL SUMMARY

Updated Summary Schedules (Exhibit LA-5)

Q. What does Schedule A in Exhibit LA-5 show?

A. Exhibit LA-5 shows the development of the adjusted revenue requirement for Aqua's water and wastewater utility operations.

Q. Did Aqua make some revisions to its requested revenue deficiency amounts in its rebuttal testimony?

A. Yes. Aqua reduced its overall requested revenue increase from the $97.685 million amount in its original filing to an amount of $97.605 million in its rebuttal testimony. The following table summarizes the changes in Aqua's proposed revenue deficiency amounts for each utility, before application of Aqua's proposed Act 11 reallocation of revenue requirement amounts from wastewater utilities onto the water utility customers[1]:

Summary of Aqua PA's Claimed Revenue Deficiency Amounts for Each Utility

Line No.	Description	Per Aqua's Original Application	Per Aqua Rebuttal	Difference
		(A)	(B)	(C) = (B)-(A)
1	Water Operations Revenue Deficiency	$ 65,279,187	$ 65,285,261	$ 6,073
2	Wastewater Base Operations Deficiency	$ 16,926,261	$ 16,899,203	$ (27,057)
3	Limrick Wastewater Operations Deficiency	$ 5,947,094	$ 5,937,121	$ (9,973)
4	East Bradford Wastewater Operations Deficiency	$ 816,876	$ 815,294	$ (1,582)
5	Cheltenham Wastewater Operations Deficiency	$ 3,057,334	$ 3,037,963	$ (19,371)
6	East Norriton Wastewater Operations Deficiency	$ 2,907,169	$ 2,898,212	$ (8,957)
7	New Garden Wastewater Operations Deficiency	$ 2,750,907	$ 2,732,128	$ (18,779)
8	Total Company Deficiency	$ 97,684,827	$ 97,605,182	$ (79,645)

Source:
Col. A: Amounts from AP Exhibit 1A
Col.B: Amounts from AP Exhibit 1-A(a)

[1] OCA Glenn Watkins addresses the proposed reallocation of revenue requirement amounts from wastewater utilities onto water utility ratepayers pursuant to Act 11.

Q. Since its rebuttal filing, has Aqua acknowledged that it omitted from its rebuttal calculations offsets to rate base for accumulated deferred income tax liabilities?

A. Yes. Aqua has acknowledged that it inadvertently omitted from its rebuttal calculations offsets to rate base for accumulated deferred income tax liabilities. In Exhibit LA-6, on Schedules B-4 and B-5, I have reflected corrections to reduce rate base for the accumulated deferred income tax liability amounts that Aqua has indicated that it inadvertently omitted from its rebuttal presentation.

Q. What is shown on Exhibit LA-5, Schedule A, page 1?

A. Schedule A, page 1, reproduces in summary form the revenue increase amounts that Aqua is requesting in total (column A), for its water utility (column B), and for its wastewater utilities (columns C through H). As shown on Schedule A, page 1, column A, line 7, Aqua's application requested total base rate revenue increases of approximately $97.685 million based on a fully projected future test year ("FPFTY") ending March 31, 2023. Exhibit LA-5, Schedule A, page 1 has not changed since the previous version that was filed with my direct testimony in Exhibit LA-1.[2] The impact of adjustments that I and other OCA witnesses are recommending continue to be shown as adjustments to the amounts that were presented in Aqua's original application.

[2] Exhibit LA-5 in total has 50 pages. Exhibit LA-5, Schedule A, has 11 pages. Because Exhibit LA-5 also includes a contents page (that is numbered as page 1 of that Exhibit), the 11 pages of Exhibit LA-5 that constitute Schedule A are numbered as pages 2 through 11 of 50 in the numbering at the top right hand side of each page of Exhibit LA-5.

Q. What is shown on Exhibit LA-5, Schedule A, page 2?

A. Schedule A, page 2, shows the updated calculations of the revenue increase or decrease amounts that reflect the recommendations of OCA witnesses. The total revenue excess (combined water and wastewater utility results) is shown on Schedule A, page 2, line 7, in column A. The updated Aqua water utility revenue excess is shown on Schedule A, page 2, line 7, in column B. The updated revenue deficiencies for Aqua's wastewater utilities are shown in columns C through H, on Schedule A, page 2, line 7.

As shown on Exhibit LA-5, Schedule A, page 2, column A, line 7, my recommendations and the recommendations of other OCA witnesses produce an overall net revenue excess of approximately $12 million based on a fully projected future test year ("FPFTY") ending March 31, 2023.

Q. What revenue deficiency or excess do you recommend for Aqua's water utility?

A. As shown on Exhibit LA-5, Schedule A, page 2, column B, line 7, the adjusted results for Aqua's water utility result in a revenue excess of approximately $35 million.

Q. What revenue deficiency or excess do you recommend for Aqua's wastewater utilities?

A. The adjusted revenue deficiency results for Aqua's wastewater utilities are shown on Exhibit LA-5, Schedule A, page 2, in columns C through H, on line 7, and are summarized below:

- Wastewater Base (column C): $11.75 million revenue deficiency
- Limerick Wastewater (column D): $4.5 million revenue deficiency
- East Bradford Wastewater (column E): $0.680 million revenue deficiency
- Cheltenham Wastewater (column F): $1.907 million revenue deficiency
- East Norriton Wastewater (column G): $2.287 million revenue deficiency
- New Garden Wastewater (column H): $1.989 million revenue deficiency.

Q. What is shown on Exhibit LA-5, Schedule A, page 3?

A. Schedule A, page 3 of 11, summarizes the differences between Aqua's request (as summarized on Schedule A, page 1) and OCA's adjusted results (as summarized on Schedule A, page 2). Schedule A, page 3, line 1, shows the differences in rate base between Aqua's request and OCA's adjusted results. Line 3 shows differences in required net operating income. Line 4 shows differences in adjusted net operating income. Line 5 shows differences in the amount of net operating income excess or deficiency. Line 7 shows differences in the revenue requirement excess or deficiency.

As shown on Exhibit LA-5, Schedule A, page 3, column A, line 7, the results of my recommendations and the recommendations of other OCA witnesses, reflect revenue requirement impacts that are approximately $109.8 million lower than Aqua

has requested. In other words, the results of the adjustments recommended by me and other OCA witnesses produce base rate revenues for Aqua that are $109.8 million lower than the revenue increases proposed by Aqua.

Q. Have you presented a reconciliation of Aqua's proposed revenue increase with OCA's adjusted revenue excess or deficiency for each of Aqua's water and wastewater utility operations?

A. Yes. Exhibit LA-5, Schedule A, pages 4 through 11, present a reconciliation of the revenue requirement for Aqua's water utility (page 4), and for each of Aqua's wastewater utilities (pages 5 through 10)[3], reflecting the approximate revenue requirement impact of the recommendations of OCA witnesses. The approximate revenue requirement impact of each adjustment is shown in column C of Schedule A, pages 4 through 10, for each utility. Additionally, Exhibit LA-5, Schedule A, page 11 of 11 presents an overall summary showing the approximate revenue requirement impacts of the recommendations of OCA witnesses.

Exhibit LA-5, Schedule A, page 11 of 11, line 1, shows the impacts of OCA cost of capital recommendations, calculated using the rate base in Aqua's original application, and are shown for each utility in columns A through G, with a total for all of the Aqua PA utilities combined shown in column H. As shown on Schedule A, page 11, line 1, in column H, the OCA's cost of capital recommendations reduce Aqua's requested revenue increase by $97.64 million for Aqua PA utilities.

[3] As noted above, because Exhibit LA-5 has a covered page that is numbered as page 1 of that Exhibit, the 11 pages of Schedule A are internally numbered as pages 1 through 11 of Schedule A, but in the upper right hand corner of Exhibit LA-5, those pages are numbered as pages 2 through 12 of 50 of Exhibit LA-5.

Exhibit LA-5, Schedule A, page 11, lines 2 through 26, show the estimated revenue requirement impacts of each OCA rate base and net operating income adjustment for each Aqua PA utility in columns A through G, with total combined amounts for all of the utilities shown in column H.

As shown on Exhibit LA-5, Schedule A, page 11, line 27, in column H, the combined OCA recommendations reduce Aqua's requested revenue requirement by approximately $109.6 million. In comparison with Aqua PA's originally filed revenue increase request of approximately $97.685 million (which is shown on Exhibit LA-5, Schedule A, page 11, line 28, in column H), after reflecting the recommendations of OCA witnesses, a net revenue requirement decrease of approximately $12 million is shown. Amounts of the recommended revenue excess or deficiency for each Aqua utility are shown on line 29. The amounts for each utility based on the Schedule A, page 11 summary of estimated revenue requirement impacts on line 29 are reconciled with the updated calculated revenue requirement excess or deficiency amounts for each Aqua PA utility, which are shown on line 30. Differences between those amounts are shown on line 31.

Q. What is shown on Schedule A-1 of Exhibit LA-5?

A. Schedule A-1 presents the derivation of my recommended Gross Revenue Conversion Factor ("GRCF") for the Aqua water and wastewater utilities, as updated to reflect revised recommendations by myself and other OCA witnesses. The GRCF is used to derive the amount of revenue increase (decrease) that is needed based upon a deficiency (excess) in the utility's ongoing level net operating income. The

GRCFs for each Aqua PA utility have not changed from those presented in my direct testimony; however, some of the amounts shown on Schedule A-1 of Exhibit LA-5, such as the components of the updated revenue requirement deficiency or excess for each Aqua PA utility reflect updated or revised information.

Q. What is shown on Schedule B of Exhibit LA-5?

A. Exhibit LA-5, Schedule B shows my updated recommended adjusted rate base for each Aqua utility. Page 1 shows the adjusted rate base for Aqua's water utility. Pages 2 through 7 show the adjusted rate base for each Aqua wastewater utility. The presentation in Exhibit LA-5 is similar to the one presented in Exhibit LA-1 that was filed with my direct testimony, but reflects the impact of updates and revisions to certain adjustments which I will identify and explain in my surrebuttal testimony.

Q. What is shown on Schedule C of Exhibit LA-5?

A. Schedule C presents my updated recommended adjusted net operating income. Page 1 summarizes my recommended net operating income for the water utility. Pages 2 through 7 summarize my recommended adjusted net operating income for each Aqua wastewater utility. The presentation in Exhibit LA-5 is similar to the one presented in Exhibit LA-1 that was filed with my direct testimony, but reflects the impact of updates and revisions to certain adjustments which I will identify and explain in my surrebuttal testimony.

Q. What is shown on Exhibit LA-5, Schedule D?

A. Schedule D presents OCA's recommended capital structure and overall rate of return based on the recommendations of OCA witness David Garrett. Mr. Garrett's cost of capital recommendations have not changed from his direct testimony to OCA's surrebuttal filing.

<u>Updated Adjustment Schedules (Exhibit LA-6)</u>

Q. What does Exhibit LA-6 show?

A. Exhibit LA-6 shows the adjustments to rate base and net operating income that I am recommending as updated and revised, as explained in my surrebuttal testimony. The contents page of Exhibit LA-6 indicates whether each rate base and net operating income adjustment pertains to Aqua's water utility, wastewater utility operations, or both. A column has been added to the contents page of Exhibit LA-6 indicating which adjustments have been added or revised.

III. RATE BASE

Q. Have you revised some of the rate base adjustments that were presented with your direct testimony?

A. Yes. Based on Aqua's rebuttal testimony, I am withdrawing the adjustment for CIAC and Customer Advances (Schedule B-2). The adjustment for Cash Working Capital (Schedule B-3) has been updated to reflect adjustments to expense amounts. An adjustment for an Accumulated Deferred Income Tax ("ADIT") offset to rate base that Aqua witness Saball states at page 7, lines 5-8, of her rebuttal testimony was inadvertently omitted by the Company has been reflected as shown on Exhibit

LA-6, Schedule B-4. That is a new adjustment that was not presented with my direct testimony in Exhibit LA-2. Additionally, an adjustment is being added as shown on Exhibit LA-6, Schedule B-5, to extend that rate base deduction for the ADIT liability through March 31, 2023, the end of the FPFTY, as confirmed by Aqua's response to an OCA informal inquiry about that item.

<u>Schedule B-2, CIAC and Customer Advances – Actual Amounts as of 3/31/2021 (Water and Wastewater Utilities)</u>

Q. Has the adjustment to rate base for CIAC and Customer Advances that was presented with your direct testimony been withdrawn?

A. Yes. This adjustment has been withdrawn based on the explanations in Aqua's rebuttal testimony.

<u>Schedule B-3, Cash Working Capital (Water and Wastewater)</u>

Q. Have the amounts of Cash Working Capital been revised for Aqua's water utility and Aqua's wastewater base utility operations?

A. Yes. As shown on Exhibit LA-6, Schedule B-3, amounts of Cash Working Capital have been revised for Aqua's water utility and Aqua's wastewater base utility operations to reflect updates of operating expenses.

Q. Aqua witness Packer states at page 10 of his rebuttal testimony that the Company has never been subject to a hypothetical capitalization structure for ratemaking purposes and thus claims that the interest expense used in the OCA's calculation of cash working capital does not reflect the cost of service of the Company. Please respond.

A. The interest amount used in the calculation of cash working capital reflects the weighted cost of interest in the capital structure multiplied by the rate base. This results in synchronizing the interest amounts used for the various components of computing the Company's revenue requirement. The OCA's capital structure is sponsored by OCA witness Garrett. Mr. Garrett will be responding to the Aqua rebuttal about the capital structure. In terms of using the amount of interest in the calculation of cash working capital, it is standard regulatory practice to coordinate the amounts as I have done. The updated cash working capital requirement shown on Exhibit LA-6, Schedule B-3 continues to reflect the appropriate synchronization and coordination of OCA's recommended weighted cost of debt and rate base and thus reflects an appropriate impact on the cash working capital allowance and is consistent with the other components of OCA's recommendations. Trying to use some other non-synchronized amount for interest expense in the cash working capital allowance as Mr. Packer seems to be suggesting would result in inconsistent treatment of allowed interest expense within the OCA's presentation. Mr. Packer at page 10, lines 5-6, of his rebuttal testimony seems to recognize the need for proper coordination among the rate case revenue requirement components when he states that: "Because payment of interest generally lags receipts of revenue, an increase in interest expense reduces the cash working capital requirements."

<u>Schedule B-4, Accumulated Deferred Income Tax ("ADIT") offset to rate base that was inadvertently omitted by the Company</u>

Q. What does Aqua witness Saball's rebuttal testimony state at page 7, lines 5-8?

A. Ms. Saball's rebuttal testimony at page 7, lines 5-8 states as follows:

During the course of preparing my rebuttal testimony I realized I inadvertently omitted $3.4 million of accumulated deferred income tax on uncertain tax positions that would have reduced the Company's rate base. The Company will update its exhibits accordingly.

Q. Was the inadvertently omitted ADIT adjustment to reduce rate base reflected by Aqua in Aqua's original or rebuttal presentations?

A. No, according to Aqua's response to an informal OCA discovery request concerning this. Aqua had not reflected this adjustment yet in either its original application or in its rebuttal presentation of rate base.

Q. Have you reflected the ADIT amount of approximately $3.4 million that was identified in Ms. Saball's rebuttal testimony as a rate base offset?

A. Yes. On Exhibit LA-6, Schedule B-4, I have reflected a rate base offset to Aqua PA's water utility operations for this ADIT amount of approximately $3.4 million. The amount used for the adjustment on Exhibit LA-6, Schedule B-4 was provided by Aqua PA in response to OCA informal discovery.

<u>Schedule B-5, Accumulated Deferred Income Tax ("ADIT") offset to rate base for the year ending 3/31/2023 that was inadvertently omitted by the Company</u>

Q. Please explain the adjustment shown on Exhibit LA-6, Schedule B-5.

A. In reviewing the impacts of Aqua PA's omission of the rate base deduction for ADIT that was discussed above in conjunction with the adjustment shown on Schedule B-4, the OCA identified a question about the date through which the ADIT adjustment was being made. In response to OCA informal discovery, Aqua acknowledged that the rate base deduction for ADIT should include an additional amount of $2.7 million to reflect amounts accumulated through March 31,

2023, the end of the FPFTY. The adjustment shown on Exhibit LA-6, Schedule B-5 reflects the additional rate base deduction of $2.7 million for this ADIT liability amount, per Aqua's response to the OCA's informal inquiry, as noted above.

IV. OPERATING INCOME

Added Adjustments

Q. Have you added some adjustments to operating income that were not reflected in your direct testimony?

A. Yes. As shown on Exhibit LA-6, Schedules C-19 and C-20, adjustments have been added to reflect Water Utility Miscellaneous Revenue and New Garden Late Payment Revenue, using amounts that were identified in Aqua's rebuttal testimony.

Schedule C-19, Miscellaneous Revenue (Water Utility)

Q. Please explain the adjustment shown on Schedule C-19.

A. Aqua witness Feeney's rebuttal testimony at page 30, lines 6-8 indicates that: "In reviewing Mr. Cline's recommendation, the Company did make an adjustment to increase Miscellaneous revenue by $150,172 to normalize the impact of COVID on miscellaneous revenue." As shown on Exhibit LA-6, Schedule C-19, I have reflected the impact of this Company adjustment.

Schedule C-20, New Garden Late Fee Revenue (Water Utility)

Q. Please explain the adjustment shown on Schedule C-20.

A. Aqua witness Feeney's rebuttal testimony at pages 30-31, indicates that Aqua received $8,691 in late payment revenue between April and September of 2021 for

the New Garden system which Aqua acquired in December 2020, and that Aqua accepts I&E witness Kubas' proposed adjustment which took the monthly average of $1,448.50 per month and annualized that revenue to reflect a full 12 months, which produces annual revenue of $17,382, as shown on Exhibit LA-6, Schedule C-20.

<u>Revised Adjustments and Response to Aqua Rebuttal on Adjustments that Are Not Being Revised</u>

Q. Have you revised some of the OCA's adjustments to net operating income in your surrebuttal presentation?

A. Yes. The OCA's net operating income adjustments that are being revised in my surrebuttal presentation are identified on the contents page to Exhibit LA-6.

<u>Schedule C-2, Special Contract Revenue (Water Utility)</u>

Q. Has OCA witness Watkins revised his recommended adjustment for contract revenue?

A. Yes. As shown on Exhibit LA-6, Schedule C-2, I have reflected Mr. Watkins' revised amount for his revised recommended adjustment for contract revenue.

<u>Schedule C-3, Income Tax Expense – Repairs Deduction (Water and Wastewater)</u>

Q. Have you revised the amount of reduction to income tax expense for repairs deductions?

A. Yes. As shown on Exhibit LA-6, Schedule C-3, I have reflected an amount for repairs deductions of $164.5 million. This is based on a three-year average of the $167.4 million for 2022 and the amounts that Aqua projected in its rate application

for 2023 and 2024 of $163 million. This produces reductions to income tax expense of $1.573 million as shown on Exhibit LA-6, Schedule C-3, line 10.

Q. Aqua has proposed to not reflect $4 million per year for its repairs deductions in the calculation of income tax expense, on the basis that Aqua has identified that portion of its annual repairs deductions as being uncertain. Do you agree with Aqua's proposal to <u>not</u> reflect uncertain income tax deductions for ratemaking purposes for the calculation of income tax expense in the current Aqua PA rate case?

A. No. Deductions claimed or expected to be claimed by Aqua on filed tax returns should be used to compute income tax expense in the current Aqua PA rate case. The fact that an IRS audit has not yet occurred for some of the deductions that Aqua has claimed or is expected to claim on filed income tax returns should not impact the ratemaking treatment. All tax deductions that are related to Aqua PA's public utility operations that are claimed or are expected to be claimed on income tax returns should be utilized to calculate the allowance for income tax expense in Aqua's rate case.

Q. What amounts of its repair deductions has Aqua identified as being associated with uncertain tax positions?

A. Aqua PA has identified $4 million per year of its income tax deductions for repairs that Aqua PA identified as being related to uncertain tax positions. This is indicated in the "FIN 48 removal" amounts listed for repairs deductions as stated in the

Company's response OCA-X-27 which was included in Exhibit LA-3 filed with my direct testimony at pages 11-12.

Q. Is the use of income tax deductions that that are claimed or are expected to be claimed on income tax returns consistent with the guidance that has been provided by the Federal Energy Regulatory Commission ("FERC")?

A. Yes. While Aqua is a water and wastewater utility, not an energy utility, and while Aqua PA is regulated by the PA PUC and not by FERC, the guidance provided by the FERC on the treatment of utility uncertain tax positions is very useful for reasonably addressing this issue for utility regulatory accounting and ratemaking purposes.

Q. Please elaborate on the financial and regulatory accounting for uncertain tax positions and how the FERC guidance applies.

A. "FIN 48" refers to the Financial Accounting Standards Board's Interpretation No. 48, Accounting for Uncertain Tax Positions, which was promulgated in 2007. FIN 48 provides guidance for financial accounting for reporting the results of "uncertain" tax positions. FIN 48 is considered to be part of generally accepted accounting principles ("GAAP") in the United States, and has been codified in the Accounting Standards Codification ("ASC") as ASC-740-10-25. For financial reporting, FIN 48 requires that entities can only recognize tax benefits that were more likely than not to be sustained on review. However, for utility ratemaking purposes, FIN 48 reserves should be disregarded and per the FERC's guidance, the recorded and ratemaking

amounts for utility income taxes should be based on the positions taken or expected to be taken on the tax returns filed or expected to be filed. The FERC addressed this issue soon after FIN 48 was promulgated and, the FERC Chief Accountant issued guidance for reporting uncertain tax positions under the USOA in the issuance: *Accounting and Financial Reporting for uncertainty in Income Taxes*, 119 F.E.R.C. ¶ 62,167 (2007). That issuance required utilities to report in accordance with the guidance provided; otherwise, the reporting "could reduce the usefulness of income tax data for ratemaking purposes and or otherwise be inconsistent with Commission accounting requirements." The FERC guidance stated that regardless of uncertainty, the "amounts recorded in the accounts established for accumulated deferred income taxes are based on the positions taken in the tax returns filed or expected to be filed."[4]

The FERC Guidance Letter on reporting for jurisdictional entities for uncertainty in income taxes, explains further that:

> This practice results in the accumulated deferred income tax accounts reflecting an accurate measurement of the cash available to the entity as a result of temporary differences. This is an important measurement objective of the Commission's Uniform Systems of Account because accumulated deferred income tax balances, which are significant in amount for most Commission jurisdictional entities, reduce the base on which cost-based, rate-regulated entities are permitted to earn a return. FIN 48, which does not permit a liability for uncertain tax positions related to temporary differences to be classified as a deferred tax liability, frustrates this important measurement objective. Therefore, entities should continue to recognize deferred income taxes for Commission accounting and reporting purposes based on the difference between positions taken in tax returns filed or expected to be filed and amounts reported in the financial statements.[5]

[4] FERC Guidance Letter, Response to Question 1, p. 2.
[5] FERC Guidance Letter, Response to Question 1, p. 2-3.

Reducing the impact of income tax deductions claimed or expected to be claimed on the federal income tax returns for the utility for uncertain tax positions has thus been rejected by the FERC. Using the amounts of income tax deductions claimed or expected to be claimed on the federal income tax returns for the utility for ratemaking purposes is sound regulatory policy and reflects income tax expense based on the actual or expected federal income tax deductions without offsets for tax positions that may be uncertain. Allowing a utility to increase its federal income tax expense in a rate case to remove deductions actually claimed or expected to be claimed on the basis of uncertainty overcharges ratepayers and could produce excessive after-tax income for shareholders by ignoring income tax savings associated with income tax deductions that are being claimed. Moreover, in Aqua PA's case, the repairs deductions that Aqua has claimed or has indicated that it expects to claim for federal income tax purposes clearly relate to the provision of water and wastewater utility service by Aqua in Pennsylvania. Thus, reflecting the amounts of repairs deductions that Aqua has claimed or has indicated that it expects to claim for federal income tax purposes reflects appropriate ratemaking treatment.

Q. Aqua witness Saball stated in her rebuttal testimony at page 6, that a reserve for potential disallowance of Aqua's uncertain tax positions should be provided. Please comment.

A. Permitting a reserve to be recorded in the event that Aqua's "uncertain" tax deductions for repairs were ultimately to be disallowed by the IRS could be appropriate for ratemaking purposes but only if all of the repairs deduction amounts

that are claimed or expected to be claimed are reflected in the calculation of income tax expense for ratemaking purposes. As indicated by Ms. Saball at page 6, lines 14-15 of her rebuttal testimony, Aqua has no federal income tax audit history of its claimed repairs deductions being disallowed.

Q. At page 6, lines 20-22, of her rebuttal testimony, Mr. Saball proposes that: "If the income tax benefit is not reduced by the reserve for the uncertain tax position, and the tax position is subsequently audited and disallowed, the Company would record a regulatory asset to recover the disallowed benefit that has been included in customer rates." Please comment.

A. This result would be equitable only if the Company's repairs deductions that are claimed or expected to be claimed on income tax returns are fully reflected in the calculation of income tax expense for ratemaking purposes, as I have recommended. In contrast, Aqua's position concerning the uncertain portion of its claimed repairs tax deductions is inequitable, one-sided and would be unfair to ratepayers because (1) Aqua does not want to fully reflect the tax benefits associated with the repairs deductions that it has claimed or is expected to claim on its income tax returns, and (2) Aqua then apparently wants to be able to record a regulatory asset if any of those repairs deductions are ultimately disallowed by the IRS.

Aqua's position is inequitable because it would first deny ratepayers the benefit of reduced income tax expense from deductions claimed on its income tax returns. Then, if some portion of Aqua's repairs deductions were to be ultimately disallowed by the IRS, Aqua would propose to record regulatory assets for those

1 income tax disallowances and to charge ratepayers to recoup the income taxes
2 related to the disallowed repair deduction amounts. The Company's position on
3 repairs deductions is thus unbalanced and should be soundly rejected.
4
5 **Q. How does your proposal for the ratemaking treatment of repairs deductions**
6 **claimed or to be claimed on income tax returns provide for equitable treatment**
7 **of ratepayers and investors?**
8 A. My recommendation is to reflect all amounts of repairs deductions claimed or to be
9 claimed on income tax returns in the calculation of income tax expense in the current
10 Aqua PA rate case. The normal amount of repairs deductions without any reduction
11 for uncertain tax positions is shown on Exhibit LA-6, Schedule C-3. If the full
12 amounts of the repairs deductions are reflected in the calculation of income tax
13 expense for ratemaking purposes, such as I am recommending in the current Aqua
14 PA rate case, and if then some of Aqua's deductions for repairs that Aqua claims on
15 its income tax returns were to ultimately be disallowed by the IRS, and only then
16 would establishing a regulatory asset for the impact of such income tax
17 disallowances be appropriate. As long as Aqua's repairs deductions that are claimed
18 on income tax returns are fully reflected for ratemaking purposes (without any offset
19 for uncertain tax positions), I would not be opposed to allowing the regulatory asset
20 treatment which would only apply in the event that some portion of the uncertain
21 repairs deductions being claimed by Aqua were to be disallowed by the IRS.[6]

[6] The authorization for deferred accounting treatment should not assure future rate recovery or limit the ability of any party to a future rate case to oppose the rate recovery, address the appropriate length of recovery and the issue of whether any interest or carrying charges should apply if recovery is permitted, and reserve the right to review the prudency and reasonableness of the deferred costs.

Q. In a settlement in Aqua PA's last rate case, an agreement was reached that provided for deferral into regulatory asset or liability accounts of actual amounts for repairs deductions that exceeded a specified amount above or below the amount used for repairs deductions in the rate case settlement. Should that be continued, as Aqua has proposed?

A. No. That was a provision in the settlement in Aqua PA's last rate case and was not intended to become a new regulatory feature that would continue in perpetuity for Aqua beyond that rate case cycle.

Q. If a "collar" amount were to be utilized prospectively, do you have an opinion as to whether the $6 million collar in Aqua's last rate case settlement would continue to be appropriate?

A. In my opinion, if any "collar" amount around the repairs deduction amount that is used to compute income tax expense in the current Aqua PA rate case were to be used going-forward, the "collar" should be no wider than $4 million per year. The $4 million reflects Aqua's current estimates of the amount of its annual repairs deductions that Aqua has identified as being uncertain. Allowing a collar amount larger than $4 million could allow Aqua to unfairly manipulate its earnings between rate cases, particularly if an inadequate level of repairs deductions is used for the calculation of income tax expense in the current rate case.

<u>Schedule C-4, Income Tax Expense - Interest Synchronization (Water and Wastewater)</u>

Q. Have you updated the interest synchronization deduction for income tax expense?

A. Yes. The amount of rate base upon which the interest synchronization has been calculated has changed, which has resulted in revisions to the interest synchronization adjustment.

Q. Aqua claims that the OCA's interest synchronization is impacted by the capital structure recommendation of OCA witness Garrett, which has a higher proportion of debt than was reflected in Aqua's proposed capital structure. Is that a reason for failing to make the interest synchronization adjustment?

A. No. The interest synchronization is a standard adjustment made in utility rate cases. The weighted cost of debt is multiplied by the utility's adjusted rate base to "synchronize" or match the amount of interest deduction for ratemaking purposes to the cost of debt and rate base that is being used to establish the utility's revenue requirement. The amount of synchronized interest deduction, because it is calculated to properly match the rate base and cost of debt components being used in the utility's rate case, will typically be different than actual amounts of interest deductions claimed on the utility's filed tax returns. The interest synchronization adjustment is thus a widely accepted method of reflecting proper matching between the ratemaking elements that produce it. The fact that the OCA's recommended rate base and cost of debt differ from Aqua's proposed amounts is not a valid reason for

1 failing to properly match the components of the revenue requirement determination
2 process or to reject the OCA's interest synchronization adjustment.

3 **<u>Schedule C-5, General Inflation Adjustment (Water and Wastewater)</u>**

4 **Q. Aqua witness Manning's rebuttal at pages 1-6 claims that the Company's**
5 **proposed General Price Level Adjustment is not a blanket generalized inflation**
6 **adjustment and should therefore be allowed. Do you agree?**

7 A. No. Aqua PA's General Price Level Adjustment attempts to apply a general
8 inflation rate to operating expenses for which Aqua could not identify specific
9 adjustments. It is therefore a general inflation adjustment and I continue to
10 recommend that it be disallowed. Cases cited in my direct testimony support the
11 disallowance of utility blanket inflation adjustments.
12

13 **Q. Aqua witness Manning cites various prior Commission decisions in his rebuttal**
14 **testimony which he claims support Aqua's proposed General Price Level**
15 **Adjustment. Are you going to present further discussion in your surrebuttal**
16 **testimony about Commission precedent on disallowing utility blanket inflation**
17 **adjustments?**

18 A. No. As noted above, several cases were cited in my direct testimony supporting the
19 disallowance of utility blanket inflation adjustments. Notwithstanding Aqua's
20 rebuttal testimony about the general inflation adjustment, the Company adjustment
21 should continue to be viewed as a blanket inflation adjustment because it attempts to
22 apply a general inflation factor to operating expenses for which Aqua has not

identified specific adjustments. Further discussion of Commission decisions ruling against utility blanket inflation adjustments may be presented in OCA's briefs.

Q. Has Aqua demonstrated that the accounts to which it has proposed to apply its General Price Level Adjustment have historically increased at the rate of the GDP Price Index?

A No. Mr. Manning presents no quantitative analysis with his direct or rebuttal testimony to demonstrate that the accounts to which it has proposed to apply its General Price Level Adjustment have historically increased at the rate of the GDP Price Index. Rather, Aqua has attempted to apply a general inflation rate to a blanket group of operating expense accounts to which it could not otherwise identify specific adjustments.

Q. Please summarize your recommendation for Aqua's generalized inflation adjustment.

A. I continue to recommend that Aqua's proposed generalized inflation adjustment be rejected for the reasons presented in my direct testimony and above.

<u>Schedule C-6, Revenue for FPFTY Metered Water Sales (Water)</u>

Q. Does Aqua agree with the adjustment for metered water sales that was presented in your direct testimony?

A. No, Aqua disagrees with that adjustment. Aqua witness Heppenstall's rebuttal testimony presents an analysis of water sales comparing October 2020 with October

2021 and September 2020 with September 2021, from which she concludes that overall water sales are approximately the same (she shows a -0.1% variance for the October 2020 to October 2021 comparison and a +0.1% variance for the September 2020 to September 2021 comparison), so she contends that no adjustment for water sales is needed.

Q. Are you convinced by Aqua's comparisons of October 2020 with October 2021 and September 2020 with September 2021 water sales information that no adjustment is needed?

A. No. Because Aqua did not base its estimated FPFTY water sales on either October or September water sales amounts annualized, the presentation by Aqua on page 19 of Ms. Heppenstall's rebuttal testimony is insufficient to demonstrate that Aqua's estimated FPFTY water sales levels are reasonable and accurate.

Additional information has been requested from Aqua by the OCA in order to respond to the presentation in Aqua's rebuttal testimony. Aqua provided some of that information in response to informal inquiries by the OCA. As shown in the following table, when a comparison of October 2021 and September 2021 water sales with the corresponding pre-COVID-19 periods of October 2019 and September 2019 is made, this comparison shows that the October 2021 and September 2021 water sales levels are substantially higher:

Aqua Pennsylvania							
Water Usage Comparison - 1000 Gallons							
					2020-2021		2021 versus 2019
	Pre-Pandemic			2020-2021	Percentage	2021 versus 2019	Percentage
Description	Oct-19	Oct-20	Oct-21	Change	Change	Change	Change
	(A)	(B)	(C)	(D) = (C) - (B)	(E) = (D) / (B)	(F) = (C) - (A)	(G) = (F) / (A)
Residential	1,416,205	1,636,326	1,545,471	(90,855)	-5.6%	129,266	9.1%
Commercial	784,081	805,189	877,755	72,566	9.0%	93,674	11.9%
Public	62,994	43,714	58,915	15,201	34.8%	(4,079)	-6.5%
	2,263,280	2,485,230	2,482,141	(3,089)	-0.1%	218,861	9.7%
	Pre-Pandemic			2020-2021	Percentage	2021 versus 2019	Percentage
	Sep-19	Sep-20	Sep-21	Change	Change	Change	Change
Residential	1,528,962	1,706,364	1,636,859	(69,505)	-4.1%	107,897	7.1%
Commercial	848,893	870,301	935,491	65,190	7.5%	86,598	10.2%
Public	64,813	54,027	59,981	5,954	11.0%	(4,832)	-7.5%
	2,442,668	2,630,691	2,632,331	1,639	0.1%	189,663	7.8%
Notes and Source:							
Columns B through E: Aqua PA witness Heppenstall Rebuttal Testimony, page 19							
September and October 2019 Information: Aqua PA response to OCA Informal Discovery							
Columns F and G: Calculated using the 2021 and 2019 water sales information provided by Aqua PA							

Total water usage for the recent month of October 2021, for example, has increased by 218,861,000 gallons or 9.7% over the comparable levels from the pre-COVID-19 period of October 2019. Because recent months of water usage have increased significantly above the comparable months from the pre-pandemic time frame, this suggests that Aqua has understated water sales levels for the FTY ending March 31, 2022 and for the FPFTY ending March 31, 2023. Moreover, the adjustment to residential water sales levels for the FPFTY that was presented with my direct testimony is likely to be very conservative in that the above comparisons show that Aqua's residential water usage in the recent months of October 2021 and September 2021 has increased by 9.1% and 7.1% over the corresponding months from the pre-pandemic periods of October 2019 and September 2019, and Aqua's total water sales have increased by even higher percentages.

Q. Are you revising that adjustment at this time?

A. No.

Q. If the adjustment to FPFTY water sales were to be revised would that affect certain operating expense adjustments?

A. Yes. The adjustments for Purchased Power Expense (Water) and for Chemical Expense (Water) would also be impacted. Those adjustments are not being updated at this time, subject to receipt and review of additional information on water sales which supports making revisions to the FPFTY water sales levels.

<u>Schedule C-10, Advertising Expense (Water and Wastewater)</u>

Q. Does Aqua agree with your proposed adjustment to Advertising Expense?

A. No. Aqua witness Feeney's rebuttal testimony at page 34 claims that Aqua's full proposed increases to Advertising Expense should be allowed because Aqua has new expenses for customer education which are important to the success of the Company's proposed Universal Service Program. Aqua witness Feeney also asserts that Section 1316 of the Public Utility Code permits the recovery of advertising expense that provides important information to the public regarding safety, rate changes, means of reducing usage or bills, load management or energy conservation or provides a direct benefit to ratepayers.

Q. Are you revising your Advertising Expense recommendation at this time?

A. No. Aqua has failed to demonstrate why its historical levels of advertising expense could not be reprioritized to address expanded customer outreach. Moreover, my recommendation does provide for increased amounts to address Aqua's expansion of customer education and outreach for a Universal Service Program. The amounts

recommended for FPFTY advertising expense are lower than those proposed by Aqua, however, because Aqua's proposal includes significant increases over prior year spending which Aqua has failed to adequately justify as being needed. Aqua's proposed total informational/educational advertising expense needs to be reasonable, and in view of comparisons with historical amounts, the increases proposed by Aqua for the FPFTY are too high. Normalizing the amounts, and/or encouraging Aqua to re-prioritize advertising moderately above historical levels, rather than dramatically increasing the historical advertising expenses, is therefore appropriate to reflect a reasonable level of annually recurring advertising expense in the FPFTY.

<u>Schedule C-11, Payroll Expense – Vacant Positions (Water and Wastewater)</u>

Q. Does Aqua generally agree with the OCA's vacancy rate recommendation?

A. Yes. Aqua witness Feeney indicates at page 35 of her rebuttal testimony that Aqua agrees with the use of a 2.88% vacancy rate (versus the 2.5% vacancy rate that Aqua used in its direct filing). At page 36, lines 13-15, of her rebuttal testimony, Ms. Feeney states that: "The Company accepts the 2.88% full time vacancy rate proposed by OCA and rejects the proposed adjustment to reduce the number of seasonal employees to 11."

Q. Why does Aqua not agree with your recommendation to reduce payroll expense relating to the number of Aqua's projected non-union seasonal employees in the FPFTY?

A. Aqua does not agree with my recommendation to reflect payroll amounts for 11 non-union seasonal employees in the FPFTY, which was the actual level of non-union seasonal employees as of June 30, 2021. Specifically, as discussed on pages 37-38 of her rebuttal testimony, Aqua witness Feeney states that the Company provided a revised response to data request I&E-RE-97-D, which shows that Aqua had 31 actual non-union seasonal employees as of June 30, 2019.[7] In addition, Ms. Feeney states that 2020 and 2021 are outliers due to the restrictions and safety concerns related to the Covid-19 pandemic. Moreover, Ms. Feeney states that the Company anticipates filling all of its seasonal positions in the FPFTY.

Q. How many seasonal employees has Aqua proposed be included in the FPFTY?

A. Aqua has proposed including payroll expense for 33 non-union seasonal employees be included in the FPFTY at a cost of $240,240.[8]

Q. Based on the Company's revised response to I&E-RE-97-D, has Aqua achieved its budgeted level of seasonal employees in any of the years shown on that response?

A. No. Aqua actually had fewer seasonal employees in each year as shown in its revised response to I&E-RE-97-D as shown in the table below:

[7] Ms. Feeney states that the original response to I&E-RE-97-D inadvertently omitted 31 actual seasonal employees as of June 30, 2019. Aqua's revised response to I&E-RE-97-D was provided on November 29, 2021, well after OCA's direct testimony was filed. A copy of that revised response is included in Exhibit LA-7, filed with my surrebuttal testimony.

[8] See Exhibit 2, Schedule 2 from Aqua's original filing.

Description	6/30/2019	6/30/2020	6/30/2021	Average
Aqua Authorized/Budgeted Non-Union Seasonal Employees	34	33	33	33
Aqua Actual Non-Union Seasonal Employees	31	0	11	14
Aqua Overstatement of Non-Union Seasonal Employees	3	33	22	19
Source: Revised Response to I&E-RE-97-D; averages are calculated amounts.				

As shown in the above table, when comparing the Company's authorized/budgeted seasonal employees to actual employees, Aqua's authorized/budgeted seasonal employees are overstated by 3, 33 and 22 such employees as of June 30, 2019, June 30, 2020 and June 30, 2021, respectively. In addition, the three-year average of actual seasonal employees for the referenced periods is 14 positions as compared to the three-year average of 33 authorized/budgeted seasonal employees, which results in an average overstatement of 19 non-union seasonal employees.

Q. Since Aqua's budgets have overstated its actual level of seasonal employees for all periods for which Aqua has provided information, should Aqua's proposal to include payroll for 33 seasonal positions in the FPFTY be adopted?

A. No. Given Aqua's demonstrated history of overstating payroll amounts for seasonal employees, Aqua's proposal to include in the FPFTY payroll expense for 33 seasonal positions is not reasonable and should be rejected.

Q. What would payroll expense for non-union seasonal employees be in the FPFTY if you used the three-year average of 14 such seasonal employees?

A. As shown in the table below, if I used the three-year average of 14 non-union seasonal employees, the related payroll expense in the FPFTY would be $93,973 for

water operations and $7,947 for wastewater operations for an overall total of $101,920.

Description	Water Operations	Wastewater Operations	Total
Three-Year Average of Actual Non-Union Seasonal Employees	14	14	
FPFTY Payroll Expense Per Non-Union Seasonal Position	$ 7,280	$ 7,280	
FPFTY Payroll Expense For Non-Union Seasonal Positions	$ 101,920	$ 101,920	
Allocation of FPFTY Payroll Expense to Water and Wastewater Operations*	92.20%	7.80%	
Non-Union Seasonal Payroll Expense Allocated to Water and Wastewater Operations	$ 93,973	$ 7,947	$ 101,920
* Percentages calculated using non-union gross payroll expense from Aqua Schedule C-4.5 from its original filing			

Q. **After reading the Company's rebuttal testimony, are you changing your recommended level of FPFTY payroll for seasonal employees**?

A. No, I am not. I continue to recommend that 11 seasonal employees be reflected in the FPFTY as a reasonable level. The 11 seasonal employees reflects the level Aqua actually had during the most recent summer available, i.e., during the summer of 2021. My recommendation reduces O&M expense by $147,673 for water operations and $12,487 for wastewater operations as shown on Exhibit LA-1, Schedule C-11 (pages 4 and 5) from my Direct Testimony filing.

Q. Are you recommending an offset to the Company's proposed COVID-19 deferral for the cost savings associated with the Company not hiring its budgeted levels of seasonal employees in 2020 and 2021?

A. Yes. Ms. Feeney's rebuttal testimony at page 38 indicates that the Company did not hire its budgeted levels of seasonal employees in the summers of 2020 and 2021 due to the COVID-19 pandemic. She indicates that the COVID-19 pandemic was the reason why there were zero non-union seasonal employees as of June 30, 2020 and

why Aqua PA had hired only 11 of the 33 authorized/budgeted seasonal employees as of June 30, 2021. Because the payroll cost savings related to not hiring the budgeted levels of seasonal employees in 2020 and 2021 is due to the COVID-19 pandemic, those cost savings should be offset against Aqua's COVID-19 deferral.

Q. What amount of offset to Aqua PA's proposed COVID-19 deferral have you identified for the payroll cost savings associated with hiring no seasonal employees in the summer of 2020 and hiring 22 fewer seasonal employees than budgeted during the summer of 2021?

A. The FTY and FPFTY payroll expense saving associated with not hiring the budgeted levels of seasonal employees because of the COVID-19 pandemic is approximately $400,000, as summarized in the table below:

Description	6/30/2020	6/30/2021	Total
Aqua Authorized/Budgeted Non-Union Seasonal Employees	33	33	66
Aqua Actual Non-Union Seasonal Employees	0	11	11
Difference, positions not filled due to COVID-19 pandemic	33	22	55
Payroll Expense Per Non-Union Seasonal Employee	$ 7,280	$ 7,280	$ 7,280
Aqua Overstatement of Non-Union Seasonal Employees	$ 240,240	$ 160,160	$ 400,400

Source: Responses to I&E-RE-16-D and I&E-RE-97-D Revised; overstatement amounts are calculated

As shown in the above table, the payroll expense savings associated with the authorized but not actually hired non-union seasonal employees during the summer of 2020 is $240,240 and for the summer of 2021 is $160,160 for an overall amount totaling $400,400. If approved, the Company's COVID-19 deferral should be offset by these payroll expense savings amounts relating to the Company having fewer seasonal employees than budgeted due to the COVID-19 pandemic.

<u>Schedule C-12, Stock-Based Compensation Expense (Water and Wastewater)</u>

Q. Does Aqua agree that executive stock-based compensation expense should be borne by investors and not ratepayers?

A. No. Aqua witness Packer at pages 13-21 claims that executive stock-based compensation is reasonable and should be charged fully to ratepayers.

Q. At pages 14-15 of his rebuttal testimony, Mr. Packer refers extensively to a 1988 Management Audit report as support for his position that executive stock-based compensation should be charged to ratepayers. Did he attach that Management Audit to his rebuttal testimony?

A. No.

Q. Have you been able to review the relevant portions of that Management Audit?

A. Yes. I have included the relevant pages in Exhibit LA-7.

Q. Does that Management Audit address stock-based compensation?

A. No. The management audit consultant recommended establishing an annual incentive plan for Philadelphia Suburban Water Company. I do not see anything in that management audit report that says that Aqua's ratepayers should pay for executive stock-based compensation. In fact, there appears to be no mention of stock-based compensation.

Q. Is stock-based compensation typically part of an annual incentive plan for utility incentive compensation?

A. No, not in my experience. Utility annual incentive compensation is typically covered in a separate incentive compensation plan and is typically paid out in cash bonuses. Stock-based incentive compensation, on the other hand, is typically limited to executives and higher level managers and is part of a different plan, not the annual incentive plan. This also appears to be the case for the stock-based compensation that Aqua has attempted to charge to ratepayers in the current case. Selected pages from the Essential Utilities most recent proxy statement, which describes the stock-based compensation that is provided to executives, is attached to my surrebuttal testimony as Exhibit LA-8.

Q. At page 16 of his rebuttal testimony, Mr. Packer indicates that Aqua's total executive compensation is comparable with other utilities executive compensation in a Willis Towers Watson Energy Services Executive Survey. Did Mr. Packer attach a copy of that survey to his rebuttal testimony?

A. No.

Q. Based on your understanding, does the Willis Towers Watson Energy Services Executive Survey address whether utility stock-based compensation for executives is borne by shareholders or charged to ratepayers?

A. Based on my understanding, no, that survey does not address whether utility stock-based compensation for executives is borne by shareholders or charged to ratepayers.

Q. Are you aware of other utilities that do not charge executive stock-based compensation expense to ratepayers, but rather have that cost be covered by shareholders?

A. Yes. Executive stock-based compensation is borne by shareholders of utilities not in all instances, but fairly commonly, based on my experience. As illustrative examples, stock-based compensation is disallowed from ratepayer recovery for most if not all of the investor-owned utilities regulated by the Arizona Corporation Commission. The expense for executive and management stock-based compensation has also been routinely removed from operating expenses charged to ratepayers for other Arizona utilities. Additionally, in its most recent rate case, Florida Power and Light Company (the largest utility operating in Florida) removed executive stock-based compensation expense, which FPL indicated was consistent with a Florida Public Service Commission decision in its 2010 rate case.

Q. Does the disallowance of executive stock-based compensation expense for ratemaking purposes prohibit the utilities from paying it?

A. No. It merely allocates responsibility for the cost to shareholders, whose representatives on the board of directors have approved the stock-based components of the executive compensation which is provided in order to more closely align the interests of shareholders and the highly compensated executives who receive it.

1 **Q. At page 17 of his rebuttal testimony, Mr. Packer asserts that the Company's**
2 **stock-based compensation should be permitted as an expense for ratemaking**
3 **purposes because the plan was approved by the Commission and costs have**
4 **been included in utility rates in prior cases. Please respond.**
5 A. The Company's stock-based compensation plan is approved by the board of
6 directors, not by the Commission. To the extent that stock-based compensation may
7 have been included in expenses in prior Aqua rate cases, such as rate cases from
8 2003 and 2007, I am recommending the Commission to take a fresh look at this
9 element of executive compensation, and to require that shareholders who are
10 benefitted from increases in the parent company's stock price and from dividends on
11 the common stock of the parent company be required to fund this component of
12 executive compensation. The purpose of stock-based compensation is to more
13 closely align the interests of the participating executives with those of shareholders.
14 As I have noted, it is not unusual to require shareholders to bear the cost of
15 components of executive compensation that primarily benefit shareholders.
16
17 **Q. Are there additional regulatory policy reasons for requiring shareholders to**
18 **absorb the cost of executive stock-based compensation programs?**
19 A. Yes. Requiring parent company shareholders to absorb the cost of executive stock-
20 based compensation programs is one means by which a utility regulatory
21 commission can help to mitigate the ever-widening gap between the "haves" and the
22 "have nots." The discrepancy of income and wealth between utility executives who
23 participate in stock-based compensation plans (aka the "fortunate few") and ordinary

workers and ordinary utility ratepayers is becoming a growing societal concern. Taking one small measure to help remedy this large and growing discrepancy, i.e., requiring shareholders to bear the cost of the executive stock-based compensation programs that their elected representatives on the board of directors approve, can help alleviate this problem.

<u>Schedule C-13, Payroll Tax Expense (Water and Wastewater)</u>

Q. Is the payroll tax expense adjustment being revised in your surrebuttal?

A. No. The payroll expense adjustment is a direct result of other adjustments to payroll expense. Aqua's rebuttal testimony does not take issue with the methodology employed in my direct testimony to compute impacts on payroll expense from those other adjustments; however, there remain disagreements with the other adjustments to payroll expense that affect the resulting amount of payroll tax expense.

<u>Schedule C-14, Employee Group Insurance (Water and Wastewater)</u>

Q. Is the amount of expense for Employee Group Insurance related to the payroll expense and vacancy rate?

A. Yes. As described above, Aqua has accepted the use of the 2.88% vacancy rate that was recommended in my direct testimony.

Q. Are you revising the recommended amount of expense for Employee Group Insurance based on anything in Aqua's rebuttal testimony?

A. No. As shown on Exhibit LA-6, Schedule C-14, the adjustment for Employee Group Insurance is the same amount that was recommended in my direct testimony, which was presented on Exhibit LA-2, Schedule C-14 filed with my direct testimony.

<u>Schedule C-15, General Insurance (Water and Wastewater)</u>

Q. Has Aqua attempted to increase its requested amount for General Insurance expense in its rebuttal filing?

A. Yes. Aqua witness Henkel's rebuttal testimony at page 6 has accepted that an escalation rate of 4.38% that is based on a three-year 2019-2021 historic average should be used, but he has attempted to apply it differently than Aqua had originally proposed, and is now recommending an increased level for this expense that is even higher than Aqua's original request. At page 8, line 2, of his rebuttal, he indicates that Aqua's FPFTY claim for this expense is increased by $95,961 over what Aqua reflected in its original filing.

Q. Is Mr. Henkel's new approach to deriving General Insurance expense appropriate?

A. No. Rather than simply using 2022 insurance expense as the FPFTY amount, or simply using the 4.38% average increase to FTY amounts, his new approach inconsistently mixes calculation elements to produce an even higher amount than Aqua had originally requested. By further inflating the 2022 amounts, which are higher than what Aqua had previously used, he is overstating FPFTY expense for General Insurance. This is invalid because Aqua has failed to demonstrate that using

the 2022 insurance expense amounts that were already increased by more than 4.38% and attempting to further inflate those already escalated amounts by another 4.28% is consistent with the proper and reasonable use of historical averages. Aqua's proposed new, substantially increased amount for General Insurance would overstate this expense for the FPFTY and the overstated expense would remain in customer rates through the rate case cycle. This attempt by Aqua to substantially increase its previously proposed FPFTY amount of General Insurance expense is unreasonable and should be rejected.

Q. Are you revising the recommended amount of expense for General Insurance based on anything in Aqua's rebuttal testimony?

A. No. As shown on Exhibit LA-6, Schedule C-15, the adjustment for General Insurance is the same amount that was recommended in my direct testimony, which was presented on Exhibit LA-2, Schedule C-15 filed with my direct testimony. Applying the 4.38% three-year average increase to the FTY amounts appropriately derives the normal level of General Insurance expense for the FPFTY.

<u>Schedule C-16, Rate Case Expense (Water and Wastewater)</u>

Q. Have you revised the rate case expense adjustment?

A. Yes. As shown in Exhibit LA-6, Schedule C-16, the rate case expense adjustment has been revised to incorporate amounts that had previously been removed to reflect amounts that Aqua has indicated that it has already incurred.

Q. At page 9 of his rebuttal testimony, Aqua witness Manning claims that a 3.3 year rate case expense normalization period is distorted by the interval between Aqua's 2011 rate case and 2018 rate case, which he attributes to a provision in that [2011 rate case] settlement regarding the use of the tax repair deduction for income tax purposes that he indicates will not recur in the future. Please respond.

A. Aqua has continued to propose treatments for income tax repairs deductions which fail to reflect the full tax benefits of the repairs deductions that Aqua has claimed or expects to claim on its income tax returns. So, the concerns about Aqua proposing rate case treatments related to repairs deductions are in fact continuing in the current Aqua PA rate case. Moreover, Aqua's attempts to use the ratemaking treatment of its repairs deductions to the advantage of investors and to the harm of its ratepayers are continuing in the current case.

Q. Are you revising the recommended 3.3 year period for normalizing the rate case expense?

A. No, the 3.3 year period for normalizing the recommended amount of Aqua's rate case expense accurately reflects the Company's rate case filing interval based on analysis of historical filing intervals.

Q. Do you agree with Aqua witness Manning's recommendation that utility rate case expense should be deferred and amortized, rather than normalized, for ratemaking purposes?

A. No. For rate case purposes, utility rate case expense is treated as normalized expense. It is not treated as a regulatory asset, it is not included in utility rate base to earn profits for investors, and it is not treated as an amortization expense. The ratemaking treatment for utility rate case expense is therefore appropriately treated as a normalized amount of operating expense, and not as a regulatory asset that is amortized. It is notable that the ratemaking treatment does not necessarily have to precisely match Aqua's book accounting for rate case expense.

Q. At pages 8-9 of his rebuttal testimony. Mr. Manning says that the Company accounts for rate case expense by charging a Regulatory Asset which it amortizes over two or three years, based on its best timing estimate. Does the Company's book accounting for rate case expense dictate the ratemaking treatment?

A. No. As described above, the Company's book accounting for rate case expense is disregarded for ratemaking treatment. There is no asset for deferred rate case expense included in rate base. There is no amortization expense for deferred rate case expense included in allowed operating expenses. Rather a normalized amount of operating expenses is reflected. For ratemaking purposes, Aqua has not received approval to amortize rate case expense in prior cases.

Q. At page 8, lines 2-3, of his rebuttal testimony, Aqua witness Manning states that: "The Company has not, nor will it ever, seek to recover unamortized rate

case expenses from customers in a future rate case." Should that commitment by Aqua be formalized in the Commission's order in the current case?

A. Yes. This commitment was not made by the Company in its rate filing or direct testimony. This commitment by Aqua is important as a protection to ratepayers and therefore should be formalized in the Commission's Order in the current Aqua PA rate case.

<u>Schedule C-17, Non-Rate Case Legal Expense (Water)</u>

Q. Are you revising the recommended allowance for non-rate case legal expense based on Aqua's rebuttal?

A. No. Aqua witness Manning's rebuttal testimony at page 10 indicates that Aqua continues to propose using a three-year average. I have recommending using a two-year average for this expense because the earlier, more remote year included by Aqua is unusually high and is not representative of current or going forward levels of this expense.

Q. Has Aqua been consistent in using a three-year average?

A. No. Aqua witness Manning at page 10 of his rebuttal argues for the use of a three-year average for non-rate case legal expense. Aqua witness Henkel, however, at page 6, line 3, of his rebuttal testimony addressing insurance expense states: "To begin, the Company disagrees with utilizing a three-year average." Aqua has therefore been inconsistent in using or opposing the use of a three-year average for operating expenses.

<u>Schedule C-18, Supplemental Executive Retirement Plan Expense – Executive Compensation (Water and Wastewater)</u>

Q. Does Aqua agree that the compensation to top executives in the form of a Supplemental Executive Retirement Plan (SERP) should be borne by shareholders?

A. No. Aqua witness Packer, in his rebuttal testimony at page 11-13, explains the Company's opposition to having shareholders bear the cost of this form of top executive compensation.

Q. How does Mr. Packer describe the SERP?

A. At page 11 of his rebuttal testimony he states that: "The SERP or Non-Qualified Pension plan is simply a replacement benefit plan for certain highly compensated employees that are removed from the Qualified Pension plan due to IRS limitations."

Q. Is that an accurate description of a SERP?

A. No. The SERP is not a replacement retirement plan. It is an additional retirement plan. Moreover, the only participants in the SERP are not ordinary employees. The plan is restricted to top executives who are in fact highly compensated, even before considering the extra compensation provided by the SERP. Moreover, it is typical for the highly-compensated executives to participate in both the Qualified Pension plan, and to receive pension benefits from the Qualified Pension plan up to the maximum amounts permitted, and to also participate in the SERP, which provides them with additional retirement benefits beyond those available to normal

employees. Thus, Mr. Packer's attempt to describe the SERP as a normal retirement benefit that replaces the retirement benefits of the Qualified Pension plan is misleading. The SERP is viewed as an added retirement plan that is available only to top, highly-compensated executives. Compensation to such already highly-compensated executives is approved by the board of directors representing shareholders. As such, this extraordinary form of additional compensation that is available only to the top executives should be borne by shareholders, and not charged to ratepayers.

Q. Is participation in the SERP available to new executives?

A. No. At page 12, lines 22, through page 13, line 1, of his rebuttal testimony, Mr. Packer indicates that participation in the SERP is only available to executives who were enrolled in the pension plan who were hired prior to 2003 and that the SERP is not available to new executives and will ultimately be reduced as the participating executives benefits are used.

Q. If the SERP is not available to new executives, can it be used to recruit new executives?

A. Apparently not. If the SERP is closed to executives who hired after 2002, the provision of this form of additional executive compensation has apparently not been used since then, and is not currently being used, to recruit qualified executives.

Q. Please summarize your recommendation concerning SERP expense.

A. The SERP expense is a form of supplemental retirement compensation available only to a select group of highly compensated current and former executives that were hired prior to 2003. The SERP compensation was authorized by previous boards of directors for those top executives. This form of compensation is not available to normal employees. Moreover, the current and former executives who participate in the SERP have also participated in the Qualified Pension Plans. The SERP is additional retirement compensation to that provided for in the Qualified Plans. For these reasons and as discussed in my direct testimony, the expense for the SERP should be borne by shareholders and removed as an operating expense in the rate case.

V. ACT 40

Q. Do you have anything to add on Act 40 issues based on Aqua's rebuttal?

A. No. Act 40 issues were adequately addressed in my direct testimony.

VI. COVID-19 DEFERRAL

Q. How much has Aqua indicated that it has recorded as COVID-19 deferred costs?

A. Mr. Packer's rebuttal testimony at page 4, line 12, indicates that the Company has recorded $5.6 million for COVID-19 deferred costs which are related to uncollectible accounts expense.

Q. Should the Company's COVID-19 deferral be offset with cost savings that are related to the COVID-19 pandemic?

A. Yes. Some of those impacts, such as the payroll expense savings associated with hiring fewer seasonal employees in 2020 and 2021 than budgeted, have been identified as approximately $400,000. Aqua's response to OCA-X-10, as noted by Mr. Packer on page 9 of his rebuttal testimony, also contained a quantification of savings of approximately $360,000 related to work travel, hotel, seminars and conferences.[9] Other savings related to the COVID-19 pandemic will need to be identified and offset against the Company's recorded deferral amount.

Q. Should the Company be required to address its net COVID-19 deferrals in its next base rate case?

A. Yes.

Q. Should the Company cease building up its COVID-19 deferrals related to uncollectibles as of a specified date?

A. Yes. In my direct testimony, I recommended that Aqua PA terminate recording incremental uncollectible accounts expense related to COVID-19 as of the end of the FPFTY in this case. I note that I&E witness Wilson recommended that Aqua discontinue recording a regulatory asset for COVID-19 related incremental uncollectibles accounts expense after the effective date for new rates in this proceeding, which would approximately coincide with the beginning of the FPFTY.

[9] As noted by Mr. Packer, that Aqua response was submitted after the filing date for OCA's direct testimony in this case. A copy of that response has been included in Exhibit LA-7 filed with my surrebuttal.

Q. Would either of those proposals preclude Aqua from recording decreases to its COVID-19 deferral for the collection of previously written-off uncollectibles accounts?

A. No. To the extent that Aqua is able to collect bad debts that it had previously written off as being uncollectible through the COVID-19 deferral cut-off date, it would be reasonable for those collections to be accounted for and offset against the Company's COVID-19 deferral.

Q. Does Aqua witness Packer indicate that the Company's COVID-19 deferral for uncollectibles has decreased as collections have improved?

A. At page 7, lines 8-9, of his rebuttal testimony, Mr. Packer indicates that as of October 31, 2021, Aqua's COVID-19 uncollectibles deferral amount of $4.7 million is about $900,000 less than the balance at March 31, 2021, the end of the historic test year. He indicates that if this trend continues, Aqua's future claim for COVID-19 deferrals related to uncollectibles would be lower.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does. However, I reserve the right to incorporate new information that may subsequently become available through outstanding discovery or otherwise.

Aqua Pennsylvania, Inc.
Docket Nos. R-2021-3027385 and R-2021-3027386
Exhibit LA-5
Revenue Requirement Summary Schedules
Accompanying the Surrebuttal Testimony of Ralph Smith

Number	Description	Updated for Surrebuttal?	No. of Pages	Page No.
	Revenue Requirement Summary Schedules - Fully Projected Future Test Year Ending 3/31/23			
A	Calculation of Revenue Deficiency (Sufficiency)	Yes	11	2-12
A-1	Gross Revenue Conversion Factor	Yes	7	13-19
B	Adjusted Rate Base	Yes	7	20-26
B.1	Summary of Rate Base Adjustments	Yes	7	27-33
C	Adjusted Net Operating Income	Yes	7	34-40
C.1	Summary of Net Operating Income Adjustments	Yes	8	41-48
D	Capital Structure and Cost Rates	No	2	49-50
	Total Pages (including Contents page)		50	

Aqua Pennsylvania, Inc.
Calculation of Revenue Deficiency (Sufficiency)
Per Aqua

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386

Fully Projected Future Test Year Ending March 31, 2023

Line No.	Description	Reference	Total Company (A)	Water (B)	Wastewater Base Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Adjusted rate base	B	$ 4,182,606,575	$ 3,818,296,012	$ 198,372,990	$ 57,746,861	$ 5,377,205	$ 47,259,177	$ 25,308,104	$ 30,246,226
2	Rate of return	D		7.64%	7.64%	7.64%	7.64%	7.64%	7.64%	7.64%
3	Net operating income required		$ 319,547,790	$ 291,714,756	$ 15,155,537	$ 4,411,814	$ 410,814	$ 3,610,563	$ 1,933,519	$ 2,310,787
4	Adjusted net operating income	C	$ 251,040,960	$ 245,829,185	$ 3,339,899	$ 260,353	$ (159,419)	$ 1,476,344	$ (95,875)	$ 390,474
5	Net operating income deficiency		$ 68,506,830	$ 45,885,571	$ 11,815,639	$ 4,151,461	$ 570,233	$ 2,134,219	$ 2,029,394	$ 1,920,313
6	Gross revenue conversion factor	A-1		1.422652	1.432530	1.432530	1.432530	1.432530	1.432530	1.432530
7	Revenue deficiency (Sufficiency)		$ 97,684,827	$ 65,279,187	$ 16,926,261	$ 5,947,094	$ 816,876	$ 3,057,334	$ 2,907,169	$ 2,750,907
8	Operating Revenue at Current Rates	C	$ 546,806,058	$ 509,746,949	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,871,698
9	Percentage Increase	L7 / L8	17.9%	12.8%	89.0%	149.5%	80.5%	42.1%	99.4%	95.8%

Notes and Source
Exhibits 1-A through 1-G, Schedule A-3

Act 11: Per Exhibit 1-A, Act 11

10	Present Rate Revenue		$ 546,806,058	$ 509,746,949	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,871,698
11	Additional Revenue Requirement		$ 97,684,827	$ 65,279,187	$ 16,926,261	$ 5,947,094	$ 816,876	$ 3,057,334	$ 2,907,169	$ 2,750,907
12	Act 11 Allocation		$ -	$ 20,839,424	$ (13,451,997)	$ (2,977,700)	$ (457,861)	$ (515,804)	$ (1,749,281)	$ (1,686,782)
13	Proposed Revenues		$ 644,490,885	$ 595,865,561	$ 22,486,025	$ 6,947,967	$ 1,373,584	$ 9,800,270	$ 4,081,655	$ 3,935,824
14	Rate Increase/(Decrease) - $		$ 97,684,827	$ 86,118,612	$ 3,474,263	$ 2,969,394	$ 359,014	$ 2,541,530	$ 1,157,888	$ 1,064,125
15	Rate Increase/(Decrease) - %		17.86%	16.89%	18.27%	74.63%	35.39%	35.01%	39.60%	37.06%
16	Shift				37.43%	30.00%	25.00%	5.00%	30.00%	30.00%

Aqua Pennsylvania, Inc.
Calculation of Revenue Deficiency (Sufficiency)
Per OCA

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 11
Revised for Surrebuttal

Line No.	Description	Reference	Total Company (A)	Water (B)	Wastewater Base Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Adjusted rate base	B	$ 4,173,417,917	$ 3,809,175,354	$ 198,337,990	$ 57,735,861	$ 5,376,205	$ 47,252,177	$ 25,303,104	$ 30,237,226
2	Rate of return	D		6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
3	Net operating income required		$ 250,405,075	$ 228,550,521	$ 11,900,279	$ 3,464,152	$ 322,572	$ 2,835,131	$ 1,518,186	$ 1,814,234
4	Adjusted net operating income	C	$ 259,052,356	$ 253,353,244	$ 3,697,000	$ 303,033	$ (152,130)	$ 1,503,939	$ (78,264)	$ 425,535
5	Net operating income deficiency		$ (8,647,281)	$ (24,802,723)	$ 8,203,280	$ 3,161,119	$ 474,702	$ 1,331,192	$ 1,596,450	$ 1,388,699
6	Gross revenue conversion factor	A-1		1.422652	1.432530	1.432530	1.432530	1.432530	1.432530	1.432530
7	Revenue deficiency (Sufficiency)		$ (12,142,476)	$ (35,285,637)	$ 11,751,447	$ 4,528,399	$ 680,025	$ 1,906,973	$ 2,286,963	$ 1,989,353
8	Operating Revenue at Current Rates	C	$ 549,967,611	$ 512,891,121	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,889,080
9	Percentage Increase	L7 / L8	-2.2%	-6.9%	61.8%	113.8%	67.0%	26.3%	78.2%	68.9%

Notes and Source
See referenced schedules

Act 11: Per Exhibit 1-A, Act 11

10	Present Rate Revenue		$ 549,967,611	$ 512,891,121	$ 19,011,761	$ 3,978,573	$ 1,014,569	$ 7,258,740	$ 2,923,766	$ 2,889,080
11	Additional Revenue Requirement		$ (12,142,476)	$ (35,285,637)	$ 11,751,447	$ 4,528,399	$ 680,025	$ 1,906,973	$ 2,286,963	$ 1,989,353
12	Proposed Revenues before Act 11 Allocation	Note [A]	$ 537,825,135	$ 477,605,484	$ 30,763,208	$ 8,506,973	$ 1,694,594	$ 9,165,713	$ 5,210,729	$ 4,878,434
13	Rate Increase/(Decrease) - $		$ (12,142,476)	$ (35,285,637)	$ 11,751,447	$ 4,528,399	$ 680,025	$ 1,906,973	$ 2,286,963	$ 1,989,353
14	Rate Increase/(Decrease) - %		-2.21%	-6.88%	61.81%	113.82%	67.03%	26.27%	78.22%	68.86%

Note [A]: See the testimony of OCA Witness Glenn Watkins for OCA's recommended Act 11 allocation

Aqua Pennsylvania, Inc.
Calculation of Revenue Deficiency (Sufficiency)
OCA Adjusted vs. Aqua Application

Fully Projected Future Test Year Ending March 31, 2023

Line No.	Description	Reference	Total Company (A)	Water (B)	Wastewater Base Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Adjusted rate base	B	$ (9,188,658)	$ (9,120,658)	$ (35,000)	$ (11,000)	$ (1,000)	$ (7,000)	$ (5,000)	$ (9,000)
2	Rate of return	D								
3	Net operating income required		$ (69,142,715)	$ (63,164,235)	$ (3,255,258)	$ (947,662)	$ (88,242)	$ (775,432)	$ (415,333)	$ (496,553)
4	Adjusted net operating income	C	$ 8,011,396	$ 7,524,059	$ 357,101	$ 42,680	$ 7,289	$ 27,595	$ 17,611	$ 35,061
5	Net operating income deficiency		$ (77,154,111)	$ (70,688,294)	$ (3,612,359)	$ (990,342)	$ (95,531)	$ (803,027)	$ (432,944)	$ (531,614)
6	Gross revenue conversion factor	A-1								
7	Revenue deficiency (Sufficiency)		$ (109,827,303)	$ (100,564,825)	$ (5,174,814)	$ (1,418,694)	$ (136,850)	$ (1,150,361)	$ (620,206)	$ (761,554)

Notes and Source
Page 2 minus Page 1 Amounts

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Water Operations

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Revised for Surrebuttal

Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.422652	
1	Rate Base per Aqua's Filing	B		$ 3,818,296,012	-2.333%	$ (89,082,177)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.422652	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ (2,315,440)	8.54%	$ (197,644)
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.54%	$ -
4	Cash Working Capital	B-3		$ (719,000)	8.54%	$ (61,373)
5	Accumulated Deferred Income Tax Offset that had been Erroneously Omitted by Aqua in its Application	B-4		$ (3,386,218)	8.54%	$ (289,045)
6	Adjustment to ADIT for ADIT Offset that had been Erroneously Omitted by Aqua in its Application Through 3/31/2023	B-5		$ (2,700,000)	8.54%	$ (230,470)
7	Total OCA Rate Base Adjustments			$ (3,034,440)		
8	**OCA Adjusted Original Cost Rate Base**	B		$ 3,815,261,572		
	Net Operating Income					
	Effect of OCA Adjustments on NOI		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
9	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ 121,865	$ 86,656	1.422652	$ (123,281)
10	Special Contract Revenue	C-2	$ 236,777	$ 168,367	1.422652	$ (239,528)
11	Income Tax Expense - Repairs Deduction	C-3	$ -	$ 1,529,180	1.422652	$ (2,175,491)
12	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 1,679,184	1.422652	$ (2,388,894)
13	General Inflation	C-5	$ 864,335	$ 614,610	1.422652	$ (874,377)
14	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ 2,757,223	$ 1,960,603	1.422652	$ (2,789,255)
15	Purchased Power Expense	C-7	$ (96,312)	$ (68,486)	1.422652	$ 97,431
16	Chemicals Expense	C-8	$ (66,787)	$ (47,491)	1.422652	$ 67,563
17	Universal Service Program Expense	C-9	$ -	$ -	1.422652	$ -
18	Advertising Expense	C-10	$ 50,000	$ 35,554	1.422652	$ (50,581)
19	Payroll Expense	C-11	$ 267,031	$ 189,880	1.422652	$ (270,133)
20	Stock-Based Compensation	C-12	$ 780,493	$ 554,992	1.422652	$ (789,561)
21	Payroll Tax Expense	C-13	$ 93,467	$ 66,462	1.422652	$ (94,553)
22	Employee Group Insurance	C-14	$ 23,285	$ 16,558	1.422652	$ (23,556)
23	Insurance Expense	C-15	$ 71,428	$ 50,791	1.422652	$ (72,258)
24	Rate Case Expense	C-16	$ 95,651	$ 68,015	1.422652	$ (96,762)
25	Non-Rate Case Legal Expense	C-17	$ 24,981	$ 17,763	1.422652	$ (25,271)
26	Supplemental Executive Retirement Program (SERP)	C-18	$ 695,612	$ 494,635	1.422652	$ (703,693)
27	Water Miscellaneous Revenue Adjustment from Aqua's Rebuttal Filing	C-19	$ 150,172	$ 106,784	1.422652	$ (151,917)
28	Total OCA Adjustments to Operating Income	C.1	$ 5,919,048	$ 7,417,275		
29	Net Operating Income per Company Filing	C		$ 245,829,185		
30	**OCA Adjusted Net Operating Income**	C		$ 253,246,460		
	Gross Revenue Conversion Factor Difference:					
31	Per OCA	A-1			1.422652	
32	Per Company	A-1			1.422652	
33	Difference				0.000000	
34	Company Adjusted NOI Deficiency	A			$ 45,885,571	
35	GRCF Difference					$ -
36	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (100,564,826)
37	Company Requested Base Rate Revenues	A				$ 65,279,187
38	Reconciled Revenue Requirement					$ (35,285,639)
39	Revenue Requirement Calculated on Schedule A OCA	A				$ (35,285,637)
40	Difference from Above					$ (1)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Wastewater Base Operations

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Revised for Surrebuttal

Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 198,372,990	-2.349%	$ (4,660,248)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (35,000)	8.60%	$ (3,008)
5	Total OCA Rate Base Adjustments			$ (35,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 198,337,990		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ 44,115	1.432530	$ (63,196)
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 89,775	1.432530	$ (128,605)
11	General Inflation	C-5	$ 145,368	$ 103,368	1.432530	$ (148,078)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ 5,000	$ 3,555	1.432530	$ (5,093)
17	Payroll Expense	C-11	$ 19,342	$ 13,754	1.432530	$ (19,703)
18	Stock-Based Compensation	C-12	$ 66,000	$ 46,931	1.432530	$ (67,230)
19	Payroll Tax Expense	C-13	$ 7,448	$ 5,296	1.432530	$ (7,587)
20	Employee Group Insurance	C-14	$ 4,113	$ 2,925	1.432530	$ (4,190)
21	Insurance Expense	C-15	$ 710	$ 505	1.432530	$ (723)
22	Rate Case Expense	C-16	$ 8,874	$ 6,310	1.432530	$ (9,040)
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ 57,050	$ 40,567	1.432530	$ (58,114)
25	Total OCA Adjustments to Operating Income	C.1	$ 313,905	$ 357,101		
26	Net Operating Income per Company Filing	C		$ 3,339,899		
27	**OCA Adjusted Net Operating Income**	C		$ 3,697,000		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 11,815,639	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (5,174,815)
34	Company Requested Base Rate Revenues	A				$ 16,926,261
35	Reconciled Revenue Requirement					$ 11,751,446
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 11,751,447
37	Difference from Above					$ (1)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Limerick Wastewater

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 57,746,861	-2.349%	$ (1,356,609)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (11,000)	8.60%	$ (945)
5	Total OCA Rate Base Adjustments			$ (11,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 57,735,861		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 26,129	1.432530	$ (37,431)
11	General Inflation	C-5	$ 23,275	$ 16,551	1.432530	$ (23,709)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 23,275	$ 42,680		
26	Net Operating Income per Company Filing	C		$ 260,353		
27	**OCA Adjusted Net Operating Income**	C		$ 303,033		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 4,151,461	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (1,418,694)
34	Company Requested Base Rate Revenues	A				$ 5,947,094
35	Reconciled Revenue Requirement					$ 4,528,400
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 4,528,399
37	Difference from Above					$ 0

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
East Bradford Wastewater

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 5,377,205	-2.349%	$ (126,323)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (1,000)	8.60%	$ (86)
5	Total OCA Rate Base Adjustments			$ (1,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 5,376,205		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 2,433	1.432530	$ (3,486)
11	General Inflation	C-5	$ 6,828	$ 4,855	1.432530	$ (6,955)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 6,828	$ 7,289		
26	Net Operating Income per Company Filing	C		$ (159,419)		
27	**OCA Adjusted Net Operating Income**	C		$ (152,130)		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 570,233	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (136,850)
34	Company Requested Base Rate Revenues	A				$ 816,876
35	Reconciled Revenue Requirement					$ 680,026
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 680,025
37	Difference from Above					$ 0

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Cheltenham Wastewater

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 47,259,177	-2.349%	$ (1,110,229)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (7,000)	8.60%	$ (602)
5	Total OCA Rate Base Adjustments			$ (7,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 47,252,177		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 21,395	1.432530	$ (30,649)
11	General Inflation	C-5	$ 8,719	$ 6,200	1.432530	$ (8,881)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 8,719	$ 27,595		
26	Net Operating Income per Company Filing	C		$ 1,476,344		
27	**OCA Adjusted Net Operating Income**	C		$ 1,503,939		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 2,134,219	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (1,150,361)
34	Company Requested Base Rate Revenues	A				$ 3,057,334
35	Reconciled Revenue Requirement					$ 1,906,973
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 1,906,973
37	Difference from Above					$ (0)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
East Norriton Wastewater

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 9 of 11

Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 25,308,104	-2.349%	$ (594,547)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (5,000)	8.60%	$ (430)
5	Total OCA Rate Base Adjustments			$ (5,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 25,303,104		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 11,450	1.432530	$ (16,403)
11	General Inflation	C-5	$ 8,665	$ 6,161	1.432530	$ (8,826)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Total OCA Adjustments to Operating Income	C.1	$ 8,665	$ 17,611		
26	Net Operating Income per Company Filing	C		$ (95,875)		
27	**OCA Adjusted Net Operating Income**	C		$ (78,264)		
	Gross Revenue Conversion Factor Difference:					
28	Per OCA	A-1			1.432530	
29	Per Company	A-1			1.432530	
30	Difference				0.000000	
31	Company Adjusted NOI Deficiency	A			$ 2,029,394	
32	GRCF Difference					$ -
33	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (620,206)
34	Company Requested Base Rate Revenues	A				$ 2,907,169
35	Reconciled Revenue Requirement					$ 2,286,963
36	Revenue Requirement Calculated on Schedule A OCA	A				$ 2,286,963
37	Difference from Above					$ (0)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
New Garden Wastewater

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
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Revised for Surrebuttal

Line No.	Description	Schedule Reference	Component	OCA Adjustments (A)	OCA Multiplier (B)	OCA Revenue Requirement Amount (C)
		D	ROR Difference		-1.6399%	
	Rate Base	A-1	GRCF		x 1.432530	
1	Rate Base per Aqua's Filing	B		$ 30,246,226	-2.349%	$ (710,555)
		D	Rate of Return		6.000%	
	Effect of OCA Adjustments to Rate Base	A-1	GRCF		x 1.432530	
2	Utility Plant Acquisition Adjustments - Phoenixville Water	B-1		$ -	8.60%	$ -
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	B-2		$ -	8.60%	$ -
4	Cash Working Capital	B-3		$ (9,000)	8.60%	$ (774)
5	Total OCA Rate Base Adjustments			$ (9,000)		
6	**OCA Adjusted Original Cost Rate Base**	B		$ 30,237,226		
	Net Operating Income		Pre-Tax Operating Income Amount	Net Operating Income Amount Sch C.1	OCA GRCF Sch. A-1	
	Effect of OCA Adjustments on NOI					
7	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	C-1	$ -	$ -	1.432530	$ -
8	Special Contract Revenue	C-2	$ -	$ -	1.432530	$ -
9	Income Tax Expense - Repairs Deduction	C-3	$ -	$ -	1.432530	$ -
10	Income Tax Expense - Interest Synchronization	C-4	$ -	$ 13,667	1.432530	$ (19,578)
11	General Inflation	C-5	$ 12,705	$ 9,034	1.432530	$ (12,942)
12	Revenue for Post-COVID Customer Metered Water Sales	C-6	$ -	$ -	1.432530	$ -
13	Purchased Power Expense	C-7	$ -	$ -	1.432530	$ -
14	Chemicals Expense	C-8	$ -	$ -	1.432530	$ -
15	Universal Service Program Expense	C-9	$ -	$ -	1.432530	$ -
16	Advertising Expense	C-10	$ -	$ -	1.432530	$ -
17	Payroll Expense	C-11	$ -	$ -	1.432530	$ -
18	Stock-Based Compensation	C-12	$ -	$ -	1.432530	$ -
19	Payroll Tax Expense	C-13	$ -	$ -	1.432530	$ -
20	Employee Group Insurance	C-14	$ -	$ -	1.432530	$ -
21	Insurance Expense	C-15	$ -	$ -	1.432530	$ -
22	Rate Case Expense	C-16	$ -	$ -	1.432530	$ -
23	Non-Rate Case Legal Expense	C-17	$ -	$ -	1.432530	$ -
24	Supplemental Executive Retirement Program (SERP)	C-18	$ -	$ -	1.432530	$ -
25	Water Miscellaneous Revenue Adjustment from Aqua's Rebuttal Filing	C-19	$ -	$ -	1.432530	$ -
26	New Garden Late Payment Revenue from Aqua's Rebuttal Filing	C-20	$ 17,382	$ 12,360	1.432530	$ (17,706)
27	Total OCA Adjustments to Operating Income	C.1	$ 12,705	$ 22,701		
28	Net Operating Income per Company Filing	C		$ 390,474		
29	**OCA Adjusted Net Operating Income**	C		$ 413,175		
	Gross Revenue Conversion Factor Difference:					
30	Per OCA	A-1			1.432530	
31	Per Company	A-1			1.432530	
32	Difference				0.000000	
33	Company Adjusted NOI Deficiency	A			$ 1,920,313	
34	GRCF Difference					$ -
35	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE					$ (761,555)
36	Company Requested Base Rate Revenues	A				$ 2,750,907
37	Reconciled Revenue Requirement					$ 1,989,352
38	Revenue Requirement Calculated on Schedule A OCA	A				$ 1,989,353
39	Difference from Above					$ (1)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor

Aqua Pennsylvania, Inc.
Revenue Requirement Reconciliation

Fully Projected Future Test Year Ending March 31, 2023
Total Company

Exhibit LA-5
Schedule A
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 11 of 11
Added for Surrebuttal

Line No.	Description	Revenue Requirement Impacts							
		Water	Wastewater Base Operations	Limerick Wastewater	East Bradford Wastewater	Cheltenham Wastewater	East Norriton Wastewater	New Garden Wastewater	Total Company
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
	Rate Base								
1	OCA Cost of Capital Impact on Rate Base per Aqua's Filing	$ (89,082,177)	$ (4,660,248)	$ (1,356,609)	$ (126,323)	$ (1,110,229)	$ (594,547)	$ (710,555)	$ (97,640,688)
	Effect of OCA Adjustments to Rate Base								
2	Utility Plant Acquisition Adjustments - Phoenixville Water	$ (197,644)	$ -	$ -	$ -	$ -	$ -	$ -	$ (197,644)
3	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4	Cash Working Capital	$ (61,373)	$ (3,008)	$ (945)	$ (86)	$ (602)	$ (430)	$ (774)	$ (67,218)
5	Accumulated Deferred Income Tax Offset that had been Erroneously Omitted by Aqua in its Application	$ (289,045)	$ -	$ -	$ -	$ -	$ -	$ -	$ (289,045)
6	Adjustment to ADIT for ADIT Offset that had been Erroneously Omitted by Aqua in its Application Through 3/31/2023	$ (230,470)	$ -	$ -	$ -	$ -	$ -	$ -	$ (230,470)
7	Total OCA Rate Base Adjustments								
	Net Operating Income								
	Effect of OCA Adjustments on NOI								
8	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	$ (123,281)	$ -	$ -	$ -	$ -	$ -	$ -	$ (123,281)
9	Special Contract Revenue	$ (239,528)	$ -	$ -	$ -	$ -	$ -	$ -	$ (239,528)
10	Income Tax Expense - Repairs Deduction	$ (2,175,491)	$ (63,196)	$ -	$ -	$ -	$ -	$ -	$ (2,238,687)
11	Income Tax Expense - Interest Synchronization	$ (2,388,894)	$ (128,605)	$ (37,431)	$ (3,486)	$ (30,649)	$ (16,403)	$ (19,578)	$ (2,625,046)
12	General Inflation	$ (874,377)	$ (148,078)	$ (23,709)	$ (6,955)	$ (8,881)	$ (8,826)	$ (12,942)	$ (1,083,768)
13	Revenue for Post-COVID Customer Metered Water Sales	$ (2,789,255)	$ -	$ -	$ -	$ -	$ -	$ -	$ (2,789,255)
14	Purchased Power Expense	$ 97,431	$ -	$ -	$ -	$ -	$ -	$ -	$ 97,431
15	Chemicals Expense	$ 67,563	$ -	$ -	$ -	$ -	$ -	$ -	$ 67,563
16	Universal Service Program Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	Advertising Expense	$ (50,581)	$ (5,093)	$ -	$ -	$ -	$ -	$ -	$ (55,674)
18	Payroll Expense	$ (270,133)	$ (19,703)	$ -	$ -	$ -	$ -	$ -	$ (289,836)
19	Stock-Based Compensation	$ (789,561)	$ (67,230)	$ -	$ -	$ -	$ -	$ -	$ (856,791)
20	Payroll Tax Expense	$ (94,553)	$ (7,587)	$ -	$ -	$ -	$ -	$ -	$ (102,140)
21	Employee Group Insurance	$ (23,556)	$ (4,190)	$ -	$ -	$ -	$ -	$ -	$ (27,746)
22	Insurance Expense	$ (72,258)	$ (723)	$ -	$ -	$ -	$ -	$ -	$ (72,981)
23	Rate Case Expense	$ (96,762)	$ (9,040)	$ -	$ -	$ -	$ -	$ -	$ (105,802)
24	Non-Rate Case Legal Expense	$ (25,271)	$ -	$ -	$ -	$ -	$ -	$ -	$ (25,271)
25	Supplemental Executive Retirement Program (SERP)	$ (703,693)	$ (58,114)	$ -	$ -	$ -	$ -	$ -	$ (761,807)
26	Water Miscellaneous Revenue Adjustment from Aqua's Rebuttal Filing	$ (151,917)	$ -	$ -	$ -	$ -	$ -	$ -	$ (151,917)
27	New Garden Late Payment Revenue from Aqua's Rebuttal Filing	$ -	$ -	$ -	$ -	$ -	$ -	$ (17,706)	$ (17,706)
28	OCA REVENUE REQUIREMENT ADJUSTMENTS ABOVE	$ (100,564,826)	$ (5,174,815)	$ (1,418,694)	$ (136,850)	$ (1,150,361)	$ (620,206)	$ (761,555)	$ (109,827,307)
29	Company Requested Base Rate Revenues	$ 65,279,187	$ 16,926,261	$ 5,947,094	$ 816,876	$ 3,057,334	$ 2,907,169	$ 2,750,907	$ 97,684,827
30	Reconciled Revenue Requirement Deficiency or (Excess)	$ (35,285,639)	$ 11,751,446	$ 4,528,400	$ 680,026	$ 1,906,973	$ 2,286,963	$ 1,989,352	$ (12,142,480)
31	Revenue Requirement Deficiency or (Excess) Calculated on Schedule A OCA	$ (35,285,637)	$ 11,751,447	$ 4,528,399	$ 680,025	$ 1,906,973	$ 2,286,963	$ 1,989,353	$ (12,142,476)
32	Difference from Above	$ (1)	$ (1)	$ 0	$ 0	$ (0)	$ (0)	$ (1)	$ (4)

Notes and Source
Pre-tax return computed using Gross Revenue Conversion Factor
Columns A through G: This schedule, pages 4, 5, 6, 7, 8, 9, and 10, respectively

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Water
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 7

Line No.	Description	Company Proposed Amount (A)	Company Proposed Rates (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0051	0.512%	0.51%		0.51%
3	Taxable Income Before Assessments	$ 0.9949		99.49%		99.49%
4	PUC Assessments	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9885		98.85%		98.85%
6	State Income Taxes	$ 0.0988	9.990%	9.88%	9.990%	9.88%
7	Income Before Federal Income Taxes	$ 0.8898		88.98%		88.98%
8	Federal Income Taxes	$ 0.1869	21.000%	18.69%	21.000%	18.69%
9	Change in Net Operating Income	$ 0.7029		70.29%		70.29%
10	Gross Revenue Conversion Factor	1.42265		1.42265		1.42265

Notes and Source

Col. A: Aqua filing, Exhibit 1-A, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 45,885,571	70.29%	$ (24,802,723)	70.29127%
12	Uncollectibles	$ 334,387	0.51%	$ (180,748)	0.512242%
13	PUC Assessment	$ 415,302	0.64%	$ (224,485)	0.636194%
14	Current State Income Taxes	$ 6,446,497	9.88%	$ (3,484,552)	9.87527%
15	Current Federal Income Taxes	$ 12,197,430	18.69%	$ (6,593,129)	18.68502%
16	Total Revenue Increase	$ 65,279,187	100.00%	$ (35,285,637)	100.0000%
17	Total Revenue Increase (From Schedule A)			$ (35,285,637)	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Wastewater Base Operations
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-B, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 11,815,639	69.81%	$ 8,203,280	69.80655%
12	Uncollectibles	$ 202,084	1.19%	$ 140,302	1.193911%
13	PUC Assessment	$ 107,684	0.64%	$ 74,762	0.636194%
14	Current State Income Taxes	$ 1,659,988	9.81%	$ 1,152,485	9.80717%
15	Current Federal Income Taxes	$ 3,140,866	18.56%	$ 2,180,619	18.55617%
16	Total Revenue Increase	$ 16,926,261	100.00%	$ 11,751,448	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 11,751,447	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Limerick Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-C, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 4,151,461	69.81%	$ 3,161,119	69.80655%
12	Uncollectibles	$ 71,003	1.19%	$ 54,065	1.193911%
13	PUC Assessment	$ 37,835	0.64%	$ 28,809	0.636194%
14	Current State Income Taxes	583,242	9.81%	$ 444,108	9.80717%
15	Current Federal Income Taxes	$ 1,103,553	18.56%	$ 840,298	18.55617%
16	Total Revenue Increase	$ 5,947,094	100.00%	$ 4,528,399	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 4,528,399	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Bradford Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-D, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 570,233	69.81%	$ 474,702	69.80655%
12	Uncollectibles	$ 9,753	1.19%	$ 8,119	1.193911%
13	PUC Assessment	$ 5,197	0.64%	$ 4,326	0.636194%
14	Current State Income Taxes	$ 80,112	9.81%	$ 66,691	9.80717%
15	Current Federal Income Taxes	$ 151,581	18.56%	$ 126,187	18.55617%
16	Total Revenue Increase	$ 816,876	100.00%	$ 680,025	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 680,025	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Cheltenham Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-E, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 2,134,219	69.81%	$ 1,331,192	69.80655%
12	Uncollectibles	$ 36,502	1.19%	$ 22,768	1.193911%
13	PUC Assessment	$ 19,451	0.64%	$ 12,132	0.636194%
14	Current State Income Taxes	$ 299,838	9.81%	$ 187,020	9.80717%
15	Current Federal Income Taxes	$ 567,324	18.56%	$ 353,861	18.55617%
16	Total Revenue Increase	$ 3,057,334	100.00%	$ 1,906,973	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 1,906,973	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Norriton Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-F, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 2,029,394	69.81%	$ 1,596,450	69.80655%
12	Uncollectibles	$ 34,709	1.19%	$ 27,304	1.193911%
13	PUC Assessment	$ 18,495	0.64%	$ 14,550	0.636194%
14	Current State Income Taxes	$ 285,111	9.81%	$ 224,286	9.80717%
15	Current Federal Income Taxes	$ 539,459	18.56%	$ 424,373	18.55617%
16	Total Revenue Increase	$ 2,907,169	100.00%	$ 2,286,963	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 2,286,963	

Aqua Pennsylvania, Inc.
Gross Revenue Conversion Factor

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
New Garden Wastewater
Schedule A-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	Company Proposed Amounts (A)	Company Proposed Derived Percentages (B)	Company Proposed as Percentages (C)	Effective Current Income Tax Rate (B1)	Revised OCA Proposed (D)
1	Gross Revenue	$ 1.000		100.00%		100.00%
2	Uncollectibles	$ 0.0119	1.194%	1.19%		1.19%
3	Taxable Income Before Assessments	$ 0.9881		98.81%		98.81%
4	General Assessment	$ 0.0063	0.636%	0.64%		0.64%
5	Taxable Income	$ 0.9817		98.17%		98.17%
6	State Income Taxes	$ 0.0981	9.990%	9.81%	9.990%	9.81%
7	Income Before Federal Income Taxes	$ 0.8836		88.36%		88.36%
8	Federal Income Taxes	$ 0.1856	21.000%	18.56%	21.000%	18.56%
9	Change in Net Operating Income	$ 0.6981		69.81%		69.81%
10	Gross Revenue Conversion Factor	1.43253		1.43253		1.43253

Notes and Source

Col. A: Aqua filing, Exhibit 1-G, Schedule A-5
Col. B: Derived from Column A

Components of Revenue Requirement Increase

		Aqua	Percent	OCA	Percent
11	Net Income	$ 1,920,314	69.81%	$ 1,388,699	69.80655%
12	Uncollectibles	$ 32,843	1.19%	$ 23,751	1.193911%
13	PUC Assessment	$ 17,501	0.64%	$ 12,656	0.636194%
14	Current State Income Taxes	$ 269,786	9.81%	$ 195,099	9.80717%
15	Current Federal Income Taxes	$ 510,463	18.56%	$ 369,148	18.55617%
16	Total Revenue Increase	$ 2,750,907	100.00%	$ 1,989,353	100.0000%
17	Total Revenue Increase (From Schedule A)			$ 1,989,353	

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Water
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386

Revised for Surrebuttal

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 5,562,077,614	$ -	$ 5,562,077,614
2	Utility Plant Acquisition Adjustment	$ 5,918,960	$ (2,315,440)	$ 3,603,521
3	Less: Accumulated Depreciation	$ (1,187,649,009)	$ -	$ (1,187,649,009)
4	Net Plant in Service	$ 4,380,347,565	$ (2,315,440)	$ 4,378,032,126
	Additions:			
5	Materials and Supplies	$ 7,672,303	$ -	$ 7,672,303
6	Cash Working Capital	$ 1,576,000	$ (719,000)	$ 857,000
7	Total Additions to Rate Base	$ 9,248,303	$ (719,000)	$ 8,529,303
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (178,784,735)	$ -	$ (178,784,735)
9	Deferred Income Taxes	$ (392,515,121)	$ (6,086,218)	$ (398,601,339)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (571,299,856)	$ (6,086,218)	$ (577,386,074)
12	Total Rate Base	$ 3,818,296,012	$ (9,120,658)	$ 3,809,175,354

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-A, Schedule G-1
Col.B: Schedule B.1, page 1
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Wastewater Base Operations
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 281,132,004	$ -	$ 281,132,004
2	Utility Plant Acquisition Adjustment	$ 1,335,224	$ -	$ 1,335,224
3	Less: Accumulated Depreciation	$ (55,041,320)	$ -	$ (55,041,320)
4	Net Plant in Service	$ 227,425,909	$ -	$ 227,425,909
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 554,000	$ (35,000)	$ 519,000
7	Total Additions to Rate Base	$ 554,000	$ (35,000)	$ 519,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (20,965,154)	$ -	$ (20,965,154)
9	Deferred Income Taxes	$ (8,641,765)	$ -	$ (8,641,765)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (29,606,919)	$ -	$ (29,606,919)
12	Total Rate Base	$ 198,372,990	$ (35,000)	$ 198,337,990

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-B, Schedule G-1
Col.B: Schedule B.1, page 2
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Limerick Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 7

Line No.	Description	Per Company	OCA Adjustments	Per OCA
		(A)	(B)	(C)
1	Utility Plant in Service	$ 97,837,038	$ -	$ 97,837,038
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (38,525,920)	$ -	$ (38,525,920)
4	Net Plant in Service	$ 59,311,118	$ -	$ 59,311,118
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 57,000	$ (11,000)	$ 46,000
7	Total Additions to Rate Base	$ 57,000	$ (11,000)	$ 46,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (1,491,647)	$ -	$ (1,491,647)
9	Deferred Income Taxes	$ (129,610)	$ -	$ (129,610)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (1,621,257)	$ -	$ (1,621,257)
12	Total Rate Base	$ 57,746,861	$ (11,000)	$ 57,735,861

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-C, Schedule G-1
Col.B: Schedule B.1, page 3
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Bradford Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 8,469,967	$ -	$ 8,469,967
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (3,131,596)	$ -	$ (3,131,596)
4	Net Plant in Service	$ 5,338,371	$ -	$ 5,338,371
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 62,000	$ (1,000)	$ 61,000
7	Total Additions to Rate Base	$ 62,000	$ (1,000)	$ 61,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	$ -	$ -
9	Deferred Income Taxes	$ (23,166)	$ -	$ (23,166)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (23,166)	$ -	$ (23,166)
12	Total Rate Base	$ 5,377,205	$ (1,000)	$ 5,376,205

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-D, Schedule G-1
Col.B: Schedule B.1, page 4
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Cheltenham Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 63,415,602	$ -	$ 63,415,602
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (15,667,733)	$ -	$ (15,667,733)
4	Net Plant in Service	$ 47,747,869	$ -	$ 47,747,869
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 376,000	$ (7,000)	$ 369,000
7	Total Additions to Rate Base	$ 376,000	$ (7,000)	$ 369,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ (505,060)	$ -	$ (505,060)
9	Deferred Income Taxes	$ (359,633)	$ -	$ (359,633)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (864,692)	$ -	$ (864,692)
12	Total Rate Base	$ 47,259,177	$ (7,000)	$ 47,252,177

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-E, Schedule G-1
Col.B: Schedule B.1, page 5
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Norriton Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 55,678,832	$ -	$ 55,678,832
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (30,454,610)	$ -	$ (30,454,610)
4	Net Plant in Service	$ 25,224,223	$ -	$ 25,224,223
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ 80,000	$ (5,000)	$ 75,000
7	Total Additions to Rate Base	$ 80,000	$ (5,000)	$ 75,000
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	$ -	$ -
9	Deferred Income Taxes	$ 3,881	$ -	$ 3,881
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ 3,881	$ -	$ 3,881
12	Total Rate Base	$ 25,308,104	$ (5,000)	$ 25,303,104

Notes and Source

Col.A: Aqua Company Filing, Exhibit 1-F, Schedule G-1
Col.B: Schedule B.1, page 6
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
New Garden Wastewater
Schedule B
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Utility Plant in Service	$ 60,289,702	$ -	$ 60,289,702
2	Utility Plant Acquisition Adjustment	$ -	$ -	$ -
3	Less: Accumulated Depreciation	$ (29,746,456)	$ -	$ (29,746,456)
4	Net Plant in Service	$ 30,543,245	$ -	$ 30,543,245
	Additions:			
5	Materials and Supplies	$ -	$ -	$ -
6	Cash Working Capital	$ (91,000)	$ (9,000)	$ (100,000)
7	Total Additions to Rate Base	$ (91,000)	$ (9,000)	$ (100,000)
	Deductions:			
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	$ -	$ -
9	Deferred Income Taxes	$ (206,019)	$ -	$ (206,019)
10	Investment Tax Credit	$ -	$ -	$ -
11	Total Rate Base Deductions	$ (206,019)	$ -	$ (206,019)
12	Total Rate Base	$ 30,246,226	$ (9,000)	$ 30,237,226

Notes and Source

Col.A & D: PAWC Company Filing, Exhibit 3-A, page 22
Col.B: Schedule B.1.B, page 1
Col.C: Col.A + Col.B
Col.D: Schedule B.1.B, page 2
Col.E: Col.D + Col.E

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Water
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Revised for Surrebuttal

Line No.	Description	OCA Adjustments	Utility Plant Acquisition Adjustments - Phoenixville Water	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	Cash Working Capital	Accumulated Deferred Income Tax Offset that had been Erroneously Omitted by Aqua in its Application	Adjustment to ADIT for ADIT Offset that had been Erroneously Omitted by Aqua in its Application Through 3/31/2023
			B-1	B-2 Withdrawn	B-3 Revised	B-4 Added	B-5 Added
1	Utility Plant in Service	$ -					
2	Utility Plant Acquisition Adjustment	$ (2,315,440)	$ (2,315,440)				
3	Less: Accumulated Depreciation	$ -					
4	Net Plant in Service	$ (2,315,440)	$ (2,315,440)	$ -	$ -	$ -	$ -
	Additions						
5	Materials and Supplies	$ -					
6	Cash Working Capital	$ (719,000)			$ (719,000)		
7	Total Additions to Rate Base	$ (719,000)	$ -	$ -	$ (719,000)	$ -	$ -
	Deductions:						
8	Contributions in Aid of Construction and Customer Advances for Construction	$ -					
9	Deferred Income Taxes	$ (6,086,218)				$ (3,386,218)	$ (2,700,000)
10	Investment Tax Credit	$ -					
11	Total Rate Base Deductions	$ (6,086,218)	$ -	$ -	$ -	$ (3,386,218)	$ (2,700,000)
12	Total Rate Base	$ (9,120,658)	$ (2,315,440)	$ -	$ (719,000)	$ (3,386,218)	$ (2,700,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Wastewater Base Operations
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7
Revised for Surrebuttal

Line No.	Description	OCA Adjustments	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	Cash Working Capital
			B-2 Withdrawn	B-3 Revised
1	Utility Plant in Service	$ -		
2	Utility Plant Acquisition Adjustment	$ -		
3	Less: Accumulated Depreciation	$ -		
4	Net Plant in Service	$ -	$ -	$ -
	Additions			
5	Materials and Supplies	$ -		
6	Cash Working Capital	$ (35,000)		$ (35,000)
7	Total Additions to Rate Base	$ (35,000)	$ -	$ (35,000)
	Deductions:			
8	Contributions in Aid of Construction and Customer Advances for Construction	$ -		
9	Deferred Income Taxes	$ -		
10	Investment Tax Credit	$ -		
11	Total Rate Base Deductions	$ -	$ -	$ -
12	Total Rate Base	$ (35,000)	$ -	$ (35,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Limerick Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (11,000)	$ (11,000)
7	Total Additions to Rate Base	$ (11,000)	$ (11,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (11,000)	$ (11,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Bradford Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (1,000)	$ (1,000)
7	Total Additions to Rate Base	$ (1,000)	$ (1,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (1,000)	$ (1,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Cheltenham Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (7,000)	$ (7,000)
7	Total Additions to Rate Base	$ (7,000)	$ (7,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (7,000)	$ (7,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Norriton Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (5,000)	$ (5,000)
7	Total Additions to Rate Base	$ (5,000)	$ (5,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (5,000)	$ (5,000)

Aqua Pennsylvania, Inc.
Summary of Adjustments to Rate Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
New Garden Wastewater
Schedule B.1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	OCA Adjustments	Cash Working Capital B-3
1	Utility Plant in Service	$ -	
2	Utility Plant Acquisition Adjustment	$ -	
3	Less: Accumulated Depreciation	$ -	
4	Net Plant in Service	$ -	$ -
	Additions		
5	Materials and Supplies	$ -	
6	Cash Working Capital	$ (9,000)	$ (9,000)
7	Total Additions to Rate Base	$ (9,000)	$ (9,000)
	Deductions:		
8	Contibutions in Aid of Construction and Customer Advances for Construction	$ -	
9	Deferred Income Taxes	$ -	
10	Investment Tax Credit	$ -	
11	Total Rate Base Deductions	$ -	$ -
12	Total Rate Base	$ (9,000)	$ (9,000)

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Water
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 7
Revised for Surrebuttal

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 509,746,949	$ 3,144,172	$ 512,891,121
2	Operating Expenses	$ 116,492,928	$ (2,709,716)	$ 113,783,212
3	Depreciation	$ 122,166,578	$ (121,865)	$ 122,044,713
	Taxes Other Than Income:			
4	PUC Assessment	$ 2,305,969	$ -	$ 2,305,969
5	OCA & SBA Assessments	$ 937,010	$ -	$ 937,010
6	Public Utility Realty Tax	$ 4,800,000	$ -	$ 4,800,000
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ 1,073,227	$ -	$ 1,073,227
9	Federal & State Payroll Tax	$ 3,163,655	$ (93,467)	$ 3,070,188
10	Total Taxes, Other Than Income	$ 12,279,861	$ (93,467)	$ 12,186,394
11	Utility Operating Income Before Income Taxes	$ 258,807,582	$ 6,069,220	$ 264,876,802
	Income Taxes:			
12	Federal Tax - Current	$ 13,072,876	$ (951,800)	$ 12,121,076
13	Pa. CNI Tax - Current	$ 5,767,840	$ (503,039)	$ 5,264,801
14	Federal Tax - Deferred	$ (5,171,324)	$ -	$ (5,171,324)
15	Pa. CNI Tax - Deferred	$ (437,582)	$ -	$ (437,582)
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ (253,413)	$ -	$ (253,413)
18	Total Income Taxes	$ 12,978,397	$ (1,454,839)	$ 11,523,558
19	Utility Operating Income	**$ 245,829,185**	**$ 7,524,059**	**$ 253,353,244**
20	Rate Base	$ 3,818,296,012	$ (9,120,658)	$ 3,809,175,354
21	Earned Rate of Return	6.44%		6.65%

Notes and Source

Col.A: Aqua filing, Exhibit 1-A, Schedule A-1
Col.B: Schedule C.1 P1-2
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Wastewater Base Operations
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7
Revised for Surrebuttal

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 19,011,761	$ -	$ 19,011,761
2	Operating Expenses	$ 9,874,361	$ (306,457)	$ 9,567,904
3	Depreciation Expense	$ 7,780,016	$ -	$ 7,780,016
	Taxes Other Than Income:			
4	PUC Assessment	$ 86,005	$ -	$ 86,005
5	OCA & SBA Assessments	$ 34,947	$ -	$ 34,947
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ 175,853	$ -	$ 175,853
9	Federal & State Payroll Tax	$ -	$ (7,448)	$ (7,448)
10	Total Taxes, Other Than Income	$ 17,951,182	$ (313,905)	$ 17,637,277
11	Utility Operating Income Before Income Taxes	$ 1,060,579	$ 313,905	$ 1,374,484
	Income Taxes:			
12	Federal Tax - Current	$ (2,233,149)	$ (28,260)	$ (2,261,409)
13	Pa. CNI Tax - Current	$ (1,182,491)	$ (14,936)	$ (1,197,427)
14	Federal Tax - Deferred	$ 1,139,605	$ -	$ 1,139,605
15	Pa. CNI Tax - Deferred	$ (3,285)	$ -	$ (3,285)
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (2,279,319)	$ (43,196)	$ (2,322,515)
19	Utility Operating Income	**$ 3,339,899**	**$ 357,101**	**$ 3,697,000**
20	Rate Base	$ 198,372,990	$ (35,000)	$ 198,337,990
21	Earned Rate of Return	1.68%		1.86%

Notes and Source

Col.A: Aqua filing, Exhibit 1-B, Schedule A-1
Col.B: Schedule C.1 P3
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Limerick Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 3,978,573	$ -	$ 3,978,573
2	Operating Expenses	$ 2,055,513	$ (23,275)	$ 2,032,238
3	Depreciation Expense	$ 1,998,881	$ -	$ 1,998,881
	Taxes Other Than Income:			
4	PUC Assessment	$ 17,998	$ -	$ 17,998
5	OCA & SBA Assessments	$ 7,313	$ -	$ 7,313
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 4,079,706	$ (23,275)	$ 4,056,430
11	Utility Operating Income Before Income Taxes	$ (101,133)	$ 23,275	$ (77,857)
	Income Taxes:			
12	Federal Tax - Current	$ (279,621)	$ (12,695)	$ (292,316)
13	Pa. CNI Tax - Current	$ (147,783)	$ (6,709)	$ (154,493)
14	Federal Tax - Deferred	$ 65,919	$ -	$ 65,919
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (361,485)	$ (19,404)	$ (380,890)
19	Utility Operating Income	**$ 260,353**	**$ 42,680**	**$ 303,033**
20	Rate Base	$ 57,746,861	$ (11,000)	$ 57,735,861
21	Earned Rate of Return	0.45%		0.52%

Notes and Source

Col.A: Aqua filing, Exhibit 1-C, Schedule A-1
Col.B: Schedule C.1 P4
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Bradford Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 1,014,569	$ -	$ 1,014,569
2	Operating Expenses	$ 1,115,524	$ (6,828)	$ 1,108,696
3	Depreciation Expense	$ 158,552	$ -	$ 158,552
	Taxes Other Than Income:			
4	PUC Assessment	$ 4,590	$ -	$ 4,590
5	OCA & SBA Assessments	$ 1,865	$ -	$ 1,865
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ 4,600	$ -	$ 4,600
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 1,285,131	$ (6,828)	$ 1,278,303
11	Utility Operating Income Before Income Taxes	$ (270,562)	$ 6,828	$ (263,734)
	Income Taxes:			
12	Federal Tax - Current	$ (80,267)	$ (301)	$ (80,568)
13	Pa. CNI Tax - Current	$ (42,422)	$ (159)	$ (42,581)
14	Federal Tax - Deferred	$ 11,546	$ -	$ 11,546
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (111,143)	$ (460)	$ (111,603)
19	Utility Operating Income	**$ (159,419)**	**$ 7,289**	**$ (152,130)**
20	Rate Base	$ 5,377,205	$ (1,000)	$ 5,376,205
21	Earned Rate of Return	-2.96%		-2.83%

Notes and Source

Col.A: Aqua filing, Exhibit 1-D, Schedule A-1
Col.B: Schedule C.1 P5
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Cheltenham Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 7,258,740	$ -	$ 7,258,740
	Operating Revenue Deductions			
2	Operating Expenses	$ 4,575,924	$ (8,719)	$ 4,567,205
3	Depreciation Expense	$ 1,011,770	$ -	$ 1,011,770
	Taxes Other Than Income:			
4	PUC Assessment	$ 32,837	$ -	$ 32,837
5	OCA & SBA Assessments	$ 13,343	$ -	$ 13,343
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 5,633,874	$ (8,719)	$ 5,625,155
11	Utility Operating Income Before Income Taxes	$ 1,624,866	$ 8,719	$ 1,633,585
	Income Taxes:			
12	Federal Tax - Current	$ (23,451)	$ (12,349)	$ (35,801)
13	Pa. CNI Tax - Current	$ (12,394)	$ (6,527)	$ (18,921)
14	Federal Tax - Deferred	$ 184,368	$ -	$ 184,368
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ 148,522	$ (18,876)	$ 129,646
19	Utility Operating Income	**$ 1,476,344**	**$ 27,595**	**$ 1,503,939**
20	Rate Base	$ 47,259,177	$ (7,000)	$ 47,252,177
21	Earned Rate of Return	3.12%		3.18%

Notes and Source

Col.A: Aqua filing, Exhibit 1-E, Schedule A-1
Col.B: Schedule C.1 P6
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Norriton Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 2,923,766	$ -	$ 2,923,766
2	Operating Expenses	$ 2,283,124	$ (8,665)	$ 2,274,460
3	Depreciation Expense	$ 952,641	$ -	$ 952,641
	Taxes Other Than Income:			
4	PUC Assessment	$ 13,226	$ -	$ 13,226
5	OCA & SBA Assessments	$ 5,374	$ -	$ 5,374
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 3,254,366	$ (8,665)	$ 3,245,702
11	Utility Operating Income Before Income Taxes	$ (330,600)	$ 8,665	$ (321,935)
	Income Taxes:			
12	Federal Tax - Current	$ (161,303)	$ (5,853)	$ (167,156)
13	Pa. CNI Tax - Current	$ (85,251)	$ (3,094)	$ (88,344)
14	Federal Tax - Deferred	$ 11,829	$ -	$ 11,829
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (234,724)	$ (8,947)	$ (243,671)
19	Utility Operating Income	**$ (95,875)**	**$ 17,611**	**$ (78,264)**
20	Rate Base	$ 25,308,104	$ (5,000)	$ 25,303,104
21	Earned Rate of Return	-0.38%		-0.31%

Notes and Source

Col.A: Aqua filing, Exhibit 1-F, Schedule A-1
Col.B: Schedule C.1 P7
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Adjusted Net Operating Income

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
New Garden Wastewater
Schedule C
Docket Nos. R-2021-3027385 and R-2021-3027386
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Revised for Surrebuttal

Line No.	Description	Per Company (A)	OCA Adjustments (B)	Per OCA (C)
1	Operating Revenues	$ 2,871,698	$ 17,382	$ 2,889,080
	Operating Revenue Deductions			
2	Operating Expenses	$ 1,848,890	$ (12,705)	$ 1,836,185
3	Depreciation Expense	$ 735,834	$ -	$ 735,834
	Taxes Other Than Income:			
4	PUC Assessment	$ 12,991	$ -	$ 12,991
5	OCA & SBA Assessments	$ 5,279	$ -	$ 5,279
6	Public Utility Realty Tax	$ -	$ -	$ -
7	State Capital Stock Tax	$ -	$ -	$ -
8	Local Property Taxes & Misc.	$ -	$ -	$ -
9	Federal & State Payroll Tax	$ -	$ -	$ -
10	Total Taxes, Other Than Income	$ 2,602,994	$ (12,705)	$ 2,590,289
11	Utility Operating Income Before Income Taxes	$ 268,704	$ 30,087	$ 298,791
	Income Taxes:			
12	Federal Tax - Current	$ (146,422)	$ (3,254)	$ (149,676)
13	Pa. CNI Tax - Current	$ (77,386)	$ (1,720)	$ (79,106)
14	Federal Tax - Deferred	$ 102,038	$ -	$ 102,038
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Total Income Taxes	$ (121,770)	$ (4,974)	$ (126,744)
19	Utility Operating Income	**$ 390,474**	**$ 35,061**	**$ 425,535**
20	Rate Base	$ 30,246,226	$ (9,000)	$ 30,237,226
21	Earned Rate of Return	1.29%		1.41%

Notes and Source

Col.A: Aqua filing, Exhibit 1-G, Schedule A-1
Col.B: Schedule C.1 P8
Col.C: Col.A + Col.B

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Water
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water C-1	Special Contract Revenue C-2	Income Tax Expense - Repairs Deduction C-3 Revised	Income Tax Expense - Interest Synchronization C-4 Revised	General Inflation C-5	Revenue for Post-COVID Customer Metered Water Sales C-6	Purchased Power Expense C-7	Chemicals Expense C-8	Universal Service Program Expense C-9
1	Operating Revenues	$ 3,144,172		$ 236,777				$ 2,757,223			
	Operating Revenue Deductions										
2	Operating Expenses	$ (2,709,716)					$ (864,335)		$ 96,312	$ 66,787	$ -
3	Depreciation Expense	$ (121,865)	$ (121,865)								
	Taxes Other Than Income:										
4	PUC Assessment	$ -									
5	OCA & SBA Assessments	$ -									
6	Public Utility Realty Tax	$ -									
7	State Capital Stock Tax	$ -									
8	Local Property Taxes & Misc.	$ -									
9	Federal & State Payroll Tax	$ (93,467)									
10	PRE-TAX OPERATING EXPENSES	$ (2,925,048)	$ (121,865)	$ -	$ -	$ -	$ (864,335)	$ -	$ 96,312	$ 66,787	$ -
11	PRE-TAX OPERATING INCOME	$ 6,069,220	$ 121,865	$ 236,777	$ -	$ -	$ 864,335	$ 2,757,223	$ (96,312)	$ (66,787)	$ -
12	Federal Tax - Current	$ (951,800)	$ 23,035	$ 44,756	$ (1,000,437)	$ (1,098,574)	$ 163,377	$ 521,173	$ (18,205)	$ (12,624)	$ -
13	Pa. CNI Tax - Current	$ (503,039)	$ 12,174	$ 23,654	$ (528,744)	$ (580,610)	$ 86,347	$ 275,447	$ (9,622)	$ (6,672)	$ -
14	Federal Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (1,454,839)	$ 35,209	$ 68,410	$ (1,529,180)	$ (1,679,184)	$ 249,724	$ 796,619	$ (27,827)	$ (19,296)	$ -
19	TOTAL OPERATING EXPENSES	$ (4,379,887)	$ (86,656)	$ 68,410	$ (1,529,180)	$ (1,679,184)	$ (614,610)	$ 796,619	$ 68,486	$ 47,491	$ -
20	OPERATING INCOME	$ 7,524,059	$ 86,656	$ 168,367	$ 1,529,180	$ 1,679,184	$ 614,610	$ 1,960,603	$ (68,486)	$ (47,491)	$ -

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Water
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Advertising Expense C-10	Payroll Expense C-11	Stock-Based Compensation C-12	Payroll Tax Expense C-13	Employee Group Insurance C-14	Insurance Expense C-15	Rate Case Expense C-16 Revised	Non-Rate Case Legal Expense C-17	Supplemental Executive Retirement Program (SERP) C-18	Water Miscellaneous Revenue Adjustment from Aqua's Rebuttal Filing C-19 Added
1	Operating Revenues										$ 150,172
	Operating Revenue Deductions										
2	Operating Expenses	$ (50,000)	$ (267,031)	$ (780,493)		$ (23,285)	$ (71,428)	$ (95,651)	$ (24,981)	$ (695,612)	
3	Depreciation Expense										
	Taxes Other Than Income:										
4	PUC Assessment										
5	OCA & SBA Assessments										
6	Public Utility Realty Tax										
7	State Capital Stock Tax										
8	Local Property Taxes & Misc.										
9	Federal & State Payroll Tax				$ (93,467)						
10	PRE-TAX OPERATING EXPENSES	$ (50,000)	$ (267,031)	$ (780,493)	$ (93,467)	$ (23,285)	$ (71,428)	$ (95,651)	$ (24,981)	$ (695,612)	$ -
11	PRE-TAX OPERATING INCOME	$ 50,000	$ 267,031	$ 780,493	$ 93,467	$ 23,285	$ 71,428	$ 95,651	$ 24,981	$ 695,612	$ 150,172
12	Federal Tax - Current	$ 9,451	$ 50,474	$ 147,530	$ 17,667	$ 4,401	$ 13,501	$ 18,080	$ 4,722	$ 131,485	$ 28,386
13	Pa. CNI Tax - Current	$ 4,995	$ 26,676	$ 77,971	$ 9,337	$ 2,326	$ 7,136	$ 9,556	$ 2,496	$ 69,492	$ 15,002
14	Federal Tax - Deferred	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Federal & State Income Taxes	$ 14,446	$ 77,151	$ 225,501	$ 27,005	$ 6,728	$ 20,637	$ 27,635	$ 7,217	$ 200,977	$ 43,388
19	TOTAL OPERATING EXPENSES	$ (35,554)	$ (189,880)	$ (554,992)	$ (66,462)	$ (16,558)	$ (50,791)	$ (68,015)	$ (17,763)	$ (494,635)	$ 43,388
20	OPERATING INCOME	$ 35,554	$ 189,880	$ 554,992	$ 66,462	$ 16,558	$ 50,791	$ 68,015	$ 17,763	$ 494,635	$ 106,784

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Wastewater Base Operations
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Revised for Surrebuttal

Line No.	Description	OCA Adjustments	Income Tax Expense - Repairs Deduction C-3 Revised	Income Tax Expense - Interest Synchronization C-4 Revised	General Inflation C-5	Universal Service Program Expense C-9	Advertising Expense C-10	Payroll Expense C-11	Stock-Based Compensation C-12	Payroll Tax Expense C-13	Employee Group Insurance C-14	Insurance Expense C-15	Rate Case Expense C-16 Revised	Supplemental Executive Retirement Program (SERP) C-18
1	Operating Revenues	$ -												
	Operating Revenue Deductions													
2	Operating Expenses	$ (306,457)			$ (145,368)	$ -	$ (5,000)	$ (19,342)	$ (66,000)		$ (4,113)	$ (710)	$ (8,874)	$ (57,050)
3	Depreciation Expense	$ -												
	Taxes Other Than Income:													
4	PUC Assessment	$ -												
5	OCA & SBA Assessments	$ -												
6	Public Utility Realty Tax	$ -												
7	State Capital Stock Tax	$ -												
8	Local Property Taxes & Misc.	$ -												
9	Federal & State Payroll Tax	$ (7,448)								$ (7,448)				
10	PRE-TAX OPERATING EXPENSES	$ (313,905)	$ -	$ -	$ (145,368)	$ -	$ (5,000)	$ (19,342)	$ (66,000)	$ (7,448)	$ (4,113)	$ (710)	$ (8,874)	$ (57,050)
11	PRE-TAX OPERATING INCOME	$ 313,905	$ -	$ -	$ 145,368	$ -	$ 5,000	$ 19,342	$ 66,000	$ 7,448	$ 4,113	$ 710	$ 8,874	$ 57,050
12	Federal Tax - Current	$ (28,260)	$ (28,861)	$ (58,734)	$ 27,478	$ -	$ 945	$ 3,656	$ 12,475	$ 1,408	$ 777	$ 134	$ 1,677	$ 10,784
13	Pa. CNI Tax - Current	$ (14,936)	$ (15,254)	$ (31,041)	$ 14,522	$ -	$ 500	$ 1,932	$ 6,593	$ 744	$ 411	$ 71	$ 887	$ 5,699
14	Federal Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (43,196)	$ (44,115)	$ (89,775)	$ 42,000	$ -	$ 1,445	$ 5,588	$ 19,069	$ 2,152	$ 1,188	$ 205	$ 2,564	$ 16,483
19	TOTAL OPERATING EXPENSES	$ (357,101)	$ (44,115)	$ (89,775)	$ (103,368)	$ -	$ (3,555)	$ (13,754)	$ (46,931)	$ (5,296)	$ (2,925)	$ (505)	$ (6,310)	$ (40,567)
20	OPERATING INCOME	$ 357,101	$ 44,115	$ 89,775	$ 103,368	$ -	$ 3,555	$ 13,754	$ 46,931	$ 5,296	$ 2,925	$ 505	$ 6,310	$ 40,567

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Limerick Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (23,275)		$ (23,275)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (23,275)	$ -	$ (23,275)
11	PRE-TAX OPERATING INCOME	$ 23,275	$ -	$ 23,275
12	Federal Tax - Current	$ (12,695)	$ (17,094)	$ 4,400
13	Pa. CNI Tax - Current	$ (6,709)	$ (9,035)	$ 2,325
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (19,404)	$ (26,129)	$ 6,725
19	TOTAL OPERATING EXPENSES	$ (42,680)	$ (26,129)	$ (16,551)
20	OPERATING INCOME	$ 42,680	$ 26,129	$ 16,551

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Bradford Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization C-4	General Inflation C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (6,828)		$ (6,828)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (6,828)	$ -	$ (6,828)
11	PRE-TAX OPERATING INCOME	$ 6,828	$ -	$ 6,828
12	Federal Tax - Current	$ (301)	$ (1,592)	$ 1,291
13	Pa. CNI Tax - Current	$ (159)	$ (841)	$ 682
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (460)	$ (2,433)	$ 1,973
19	TOTAL OPERATING EXPENSES	$ (7,289)	$ (2,433)	$ (4,855)
20	OPERATING INCOME	$ 7,289	$ 2,433	$ 4,855

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Cheltenham Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (8,719)		$ (8,719)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (8,719)	$ -	$ (8,719)
11	PRE-TAX OPERATING INCOME	$ 8,719	$ -	$ 8,719
12	Federal Tax - Current	$ (12,349)	$ (13,997)	$ 1,648
13	Pa. CNI Tax - Current	$ (6,527)	$ (7,398)	$ 871
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (18,876)	$ (21,395)	$ 2,519
19	TOTAL OPERATING EXPENSES	$ (27,595)	$ (21,395)	$ (6,200)
20	OPERATING INCOME	$ 27,595	$ 21,395	$ 6,200

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
East Norriton Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation
			C-4	C-5
1	Operating Revenues	$ -		
	Operating Revenue Deductions			
2	Operating Expenses	$ (8,665)		$ (8,665)
3	Depreciation Expense	$ -		
	Taxes Other Than Income:			
4	PUC Assessment	$ -		
5	OCA & SBA Assessments	$ -		
6	Public Utility Realty Tax	$ -		
7	State Capital Stock Tax	$ -		
8	Local Property Taxes & Misc.	$ -		
9	Federal & State Payroll Tax	$ -		
10	PRE-TAX OPERATING EXPENSES	$ (8,665)	$ -	$ (8,665)
11	PRE-TAX OPERATING INCOME	$ 8,665	$ -	$ 8,665
12	Federal Tax - Current	$ (5,853)	$ (7,491)	$ 1,638
13	Pa. CNI Tax - Current	$ (3,094)	$ (3,959)	$ 866
14	Federal Tax - Deferred	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (8,947)	$ (11,450)	$ 2,503
19	TOTAL OPERATING EXPENSES	$ (17,611)	$ (11,450)	$ (6,161)
20	OPERATING INCOME	$ 17,611	$ 11,450	$ 6,161

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Summary of Net Operating Income Adjustments

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
New Garden Wastewater
Schedule C.1
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	OCA Adjustments	Income Tax Expense - Interest Synchronization	General Inflation	New Garden Late Payment Revenue from Aqua's Rebuttal Filing
			C-4	C-5	C-20 Added
1	Operating Revenues	$ 17,382			$ 17,382
	Operating Revenue Deductions				
2	Operating Expenses	$ (12,705)		$ (12,705)	
3	Depreciation Expense	$ -			
	Taxes Other Than Income:				
4	PUC Assessment	$ -			
5	OCA & SBA Assessments	$ -			
6	Public Utility Realty Tax	$ -			
7	State Capital Stock Tax	$ -			
8	Local Property Taxes & Misc.	$ -			
9	Federal & State Payroll Tax	$ -			
10	PRE-TAX OPERATING EXPENSES	$ (12,705)	$ -	$ (12,705)	$ -
11	PRE-TAX OPERATING INCOME	$ 30,087	$ -	$ 12,705	$ 17,382
12	Federal Tax - Current	$ (3,254)	$ (8,941)	$ 2,402	$ 3,286
13	Pa. CNI Tax - Current	$ (1,720)	$ (4,726)	$ 1,269	$ 1,736
14	Federal Tax - Deferred	$ -	$ -	$ -	$ -
15	Pa. CNI Tax - Deferred	$ -	$ -	$ -	$ -
16	ITC - Current	$ -	$ -	$ -	$ -
17	ITC - Amortized	$ -	$ -	$ -	$ -
18	Federal & State Income Taxes	$ (4,974)	$ (13,667)	$ 3,671	$ 5,022
19	TOTAL OPERATING EXPENSES	$ (17,679)	$ (13,667)	$ (9,034)	$ 5,022
20	OPERATING INCOME	$ 35,061	$ 13,667	$ 9,034	$ 12,360

Notes and Source

Line 14: State Income Tax Rate*	9.99%
Line 15: Federal Income Tax Rate*	21.00%

*Schedule A-1

Aqua Pennsylvania, Inc.
Capital Structure and Cost Rates

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Water
Schedule D
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 2

Line No.	Description	Percent	Cost Rate	Weighted Cost
		(A)	(B)	(C)
	Per Company			
1	Long Term Debt	46.08%	4.00%	1.84%
2	Common Equity	53.92%	10.75%	5.80%
3	Total Capital Structure	100.00%		7.64%
	Per OCA			
4	Long-Term Debt	50.00%	4.00%	2.00%
5	Common Equity	50.00%	8.00%	4.00%
6	Total Capital Structure	100.00%		6.00%
7	Difference			-1.640%
8	Weighted Cost of Debt			2.00%

Notes and Source:
Lines 1-3: Aqua Exhibit 1-A, Schedule E-1
Lines 4-6: Per the recommendation of OCA witness David Garrett

Aqua Pennsylvania, Inc.
Capital Structure and Cost Rates

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-5
Wastewater Operations
Schedule D
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 2

Line No.	Description	Percent	Cost Rate	Weighted Cost
		(A)	(B)	(C)
	Per Company			
1	Long Term Debt	46.08%	4.00%	1.84%
2	Common Equity	53.92%	10.75%	5.80%
3	Total Capital Structure	100.00%		7.64%
	Per OCA			
4	Long Term Debt	50.00%	4.00%	2.00%
5	Common Equity	50.00%	8.00%	4.00%
6	Total Capital Structure	100.00%		6.00%
7	Difference			-1.640%
8	Weighted Cost of Debt			2.00%

Notes and Source:
Lines 1-3: Aqua Exhibit 1-B through 1-G, Schedule E-1
Lines 4-6: Per the recommendation of OCA witness David Garrett

Aqua Pennsylvania, Inc.
Docket Nos. R-2021-3027385 and R-2021-3027386
Exhibit LA-6
Adjustment Schedules
Accompanying the SurrebuttalTestimony of Ralph Smith

Number	Description	Revised or Added for Surrebuttal?	Water, Wastewater, or Both	Confidential?	No. of Pages	Page No.
	Revenue Requirement Summary Schedules - Fully Projected Future Test Year Ending 3/31/2023					
	Rate Base Adjustments					
B-1	Utility Plant Acquisition Adjustments - Phoenixville Water	No	Water	No	1	2
B-2	Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)	Withdrawn	Both	No	1	3
B-3	Cash Working Capital	Revised	Both	No	7	4-10
B-4	Accumulated Deferred Income Tax Offset that had been Erroneously Omitted by Aqua in its Application	Added	Water	No	1	11
B-5	Adjustment to ADIT for ADIT Offset that had been Erroneously Omitted by Aqua in its Application Through 3/31/2023	Added	Water	No	1	12
	Net Operating Income Adjustments					
C-1	Utility Plant Acquisition Adjustments Amortization - Phoenixville Water	No	Water	No	1	13
C-2	Special Contract Revenue	Revised	Water	No	1	14
C-3	Income Tax Expense - Repairs Deduction	Revised	Both	No	1	15
C-4	Income Tax Expense - Interest Synchronization	Revised	Both	No	8	16-23
C-5	General Inflation	No	Both	No	1	24
C-6	Revenue for Post-COVID Customer Metered Water Sales	???	Water	No	1	25
C-7	Purchased Power Expense	???	Water	No	1	26
C-8	Chemicals Expense	???	Water	No	1	27
C-9	Universal Service Program Expense	No	Both	No	1	28
C-10	Advertising Expense	No	Both	No	1	29
C-11	Payroll Expense	No	Both	No	5	30-34
C-12	Stock-Based Compensation	No	Both	No	1	35
C-13	Payroll Tax Expense	No	Both	No	1	36
C-14	Employee Group Insurance	No	Both	No	1	37
C-15	Insurance Expense	No	Both	No	1	38
C-16	Rate Case Expense	Revised	Both	No	1	39
C-17	Non-Rate Case Legal Expense	No	Water	No	2	40-41
C-18	Supplemental Executive Retirement Program (SERP)	No	Both	No	1	42
C-19	Water Miscellaneous Revenue Adjustment from Aqua's Rebuttal Filing	Added	Water	No	1	43
C-20	New Garden Late Payment Revenue from Aqua's Rebuttal Filing	Added	Wastewater	No	1	44
	Total Pages (including Contents page)				44	

Aqua Pennsylvania, Inc.
Utility Plant Acquisition Adjustments - Phoenixville Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water Operations
Schedule B-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Amount (A)
1	Adjustment to Remove Phoenixville Water from Acquisition Adjustments from Aqua's Proposed Rate Base	$ (2,315,440)

Notes and Source:
Company Exhibit 1-A Water, Schedule G-3
See direct testimony of OCA witness Morgan DeAngelo

Aqua Pennsylvania, Inc.
Adjustment to Contributions in Aid of Construction (CIAC) and Customer Advances for Construction (CAC)

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule B-2
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1
Withdrawn for Surrebuttal

Line No.	Description	CIAC	Customer Advances	CIAC and Customer Advances 3/31/2021	Projected for 3/31/2022	Projected for 3/31/2023
		(A)	(B)	(C)	(D)	(E)

Withdrawn

Notes and Source

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 7
Revised for Surrebuttal

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 69,499,551	$ 5,739,892	$ 75,239,442	91.3	$ 6,865,599,123
2	PennVest-Interest	$ 872,044	$ 72,021	$ 944,065	15.2	$ 14,357,650
3	Total	$ 70,371,594	$ 5,811,913	$ 76,183,507		$ 6,879,956,773
4	Average Lag Days in Payment of Interest				90.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				45.1	Schedule G-5.1 from Exhibit 1-A
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(45.2)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 208,722	
9	Cash Working Capital Required				$ (9,434,232)	
10	Cash Working Capital Per OCA				$ (9,434,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (8,715,000)	
12	OCA Adjustment to Cash Working Capital				$ (719,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-A

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 69,499,551	98.76%
14	PennVest-Interest	$ 872,044	1.24%
15	Total Interest	$ 70,371,594	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 75,239,442	
17	PennVest-Interest	$ 944,065	
18	Total Interest	$ 76,183,507	Schedule C-4, page 2

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 7
Revised for Surrebuttal

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)	
1	Long Term Debt- Interest	$ 3,656,035	$ 310,725	$ 3,966,760	91.3	$ 361,966,832	
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -	
3	Total	$ 3,656,035	$ 310,725	$ 3,966,760		$ 361,966,832	
4	Average Lag Days in Payment of Interest				91.3		Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				50.2		Schedule G-5.1 from Exhibit 1-B
6	Average Lag Days between Payment of Interest						
7	and Receipt of Revenue				(41.1)		L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 10,868		
9	Cash Working Capital Required				$ (446,668)		
10	Cash Working Capital Per OCA				$ (447,000)		* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (412,000)		
12	OCA Adjustment to Cash Working Capital				$ (35,000)		

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-B

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 3,656,035	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 3,656,035	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 3,966,760	
17	PennVest-Interest	$ -	
18	Total Interest	$ 3,966,760	Schedule C-4, page 3

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater Limerick

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)	
1	Long Term Debt- Interest	$ 1,064,281	$ 90,437	$ 1,154,717	91.3	$ 105,367,946	
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -	
3	Total	$ 1,064,281	$ 90,437	$ 1,154,717		$ 105,367,946	
4	Average Lag Days in Payment of Interest				91.3		Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				49.7		Schedule G-5.1 from Exhibit 1-C
6	Average Lag Days between Payment of Interest						
7	and Receipt of Revenue				(41.6)		L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 3,164		
9	Cash Working Capital Required				$ (131,606)		
10	Cash Working Capital Per OCA				$ (132,000)		* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (121,000)		
12	OCA Adjustment to Cash Working Capital				$ (11,000)		

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-C

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 1,064,281	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 1,064,281	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 1,154,717	
17	PennVest-Interest	$ -	
18	Total Interest	$ 1,154,717	Schedule C-4, page 4

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater East Bradford

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 99,102	$ 8,422	$ 107,524	91.3	$ 9,811,575
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -
3	Total	$ 99,102	$ 8,422	$ 107,524		$ 9,811,575
4	Average Lag Days in Payment of Interest				91.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				48.1	Schedule G-5.1 from Exhibit 1-D
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(43.2)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 295	
9	Cash Working Capital Required				$ (12,726)	
10	Cash Working Capital Per OCA				$ (13,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (12,000)	
12	OCA Adjustment to Cash Working Capital				$ (1,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-D

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 99,102	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 99,102	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 107,524	
17	PennVest-Interest	$ -	
18	Total Interest	$ 107,524	Schedule C-4, page 5

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater Cheltenham

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 870,992	$ 74,052	$ 945,044	91.3	$ 86,235,223
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -
3	Total	$ 870,992	$ 74,052	$ 945,044		$ 86,235,223
4	Average Lag Days in Payment of Interest				91.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				57.2	Schedule G-5.1 from Exhibit 1-E
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(34.1)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 2,589	
9	Cash Working Capital Required				$ (88,290)	
10	Cash Working Capital Per OCA				$ (88,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (81,000)	
12	OCA Adjustment to Cash Working Capital				$ (7,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-E

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 870,992	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 870,992	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 945,044	
17	PennVest-Interest	$ -	
18	Total Interest	$ 945,044	Schedule C-4, page 6

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - Wastewater East Norriton

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 466,431	$ 39,631	$ 506,062	91.3	$ 46,178,164
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -
3	Total	$ 466,431	$ 39,631	$ 506,062		$ 46,178,164
4	Average Lag Days in Payment of Interest				91.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				44.1	Schedule G-5.1 from Exhibit 1-F
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(47.2)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 1,386	
9	Cash Working Capital Required				$ (65,441)	
10	Cash Working Capital Per OCA				$ (65,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (60,000)	
12	OCA Adjustment to Cash Working Capital				$ (5,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-F

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 466,431	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 466,431	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 506,062	
17	PennVest-Interest	$ -	
18	Total Interest	$ 506,062	Schedule C-4, page 7

Aqua Pennsylvania, Inc.
Cash Working Capital - Interest - New Garden

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule B-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 7

Line No.	Description	Amount Per Company (A)	OCA Adjustments (B)	OCA Adjusted* (C)	Lag Days (D)	Dollar Days (E)
1	Long Term Debt- Interest	$ 557,441	$ 47,303	$ 604,745	91.3	$ 55,182,937
2	PennVest-Interest	$ -	$ -	$ -	15.2	$ -
3	Total	$ 557,441	$ 47,303	$ 604,745		$ 55,182,937
4	Average Lag Days in Payment of Interest				91.3	Col E, line 3 / Col C, line 3
5	Average Lag Days in Receipt of Revenues				22.9	Schedule G-5.1 from Exhibit 1-G
6	Average Lag Days between Payment of Interest					
7	and Receipt of Revenue				(68.4)	L5 - L4
8	Pro-forma Annual Interest Expense Per Day				$ 1,657	
9	Cash Working Capital Required				$ (113,327)	
10	Cash Working Capital Per OCA				$ (113,000)	* Rounded to nearest thousandth
11	Cash Working Capital Per Company				$ (104,000)	
12	OCA Adjustment to Cash Working Capital				$ (9,000)	

Notes and Source

Col. A: Amounts from Schedule G-5.4 from Company Exhibit 1-G

* Breakout of OCA recommended interest calculated below using the ratios shown on lines 13 and 14:

	Description	Amount Per Company	Ratio
13	Long Term Debt- Interest	$ 557,441	100.00%
14	PennVest-Interest	$ -	0.00%
15	Total Interest	$ 557,441	100.00%

		Amount Per OCA	
16	Long Term Debt- Interest	$ 604,745	
17	PennVest-Interest	$ -	
18	Total Interest	$ 604,745	Schedule C-4, page 8

Aqua Pennsylvania, Inc.
Accumulated Deferred Income Tax Offset that had been Erroneously Omitted by Aqua in its Application

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water Operations
Schedule B-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1
Added for Surrebuttal

Line No.	Description	Amount
		(A)
1	Adjustment to ADIT for ADIT Offset that had been Erroneously Omitted by Aqua in its Application	$ (3,386,218)

Notes and Source:
Rebuttal Testimony of Company witness Christine L. Saball, page 7; and Aqua response to OCA informal discovery

Aqua Pennsylvania, Inc.
Adjustment to ADIT for ADIT Offset that had been Erroneously Omitted by Aqua in its Application Through 3/31/2023

Exhibit LA-6
Water Operations
Schedule B-5
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Fully Projected Future Test Year Ending March 31, 2023

Line No.	Description	Amount (A)	Reference
1	Adjustment to ADIT for ADIT Offset that had been Erroneously Omitted by Aqua in its Application Through 3/31/2023	$ (2,700,000)	A

Notes and Source:
A: Company response to OCA informal request

Aqua Pennsylvania, Inc.
Utility Plant Acquisition Adjustments Amortization - Phoenixville Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-1
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Amount
		(A)
1	Adjustment to Remove Phoenixville Water Acquistion Adjustment Amortization	$ (121,865)

Notes and Source

Company Exhibit 1-A Water, Schedule G-3
See Direct Testimony of OCA witness Morgan DeAngelo

Aqua Pennsylvania, Inc.
Special Contract Revenue

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-2
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1
Revised for Surrebuttal

Line No.	Description	Amount (A)
1	Adjustment to Increase FPFTY Special Contract Revenues	$ 236,777

Notes and Source:
See Surrebuttal Testimony of OCA Witness Glenn Watkins

Aqua Pennsylvania, Inc.
Income Tax Expense - Repairs Deduction

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-3
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1
Revised for Surrebuttal

Line No.	Description	Total Company (A)	Water Operations (B)	Wastewater Operations (C)
1	Per Company	$ (159,060,000)	$ (154,600,000)	$ (4,460,000)
2	Per OCA	$ (164,505,416)	$ (159,892,728)	$ (4,612,688)
3	Adjustment to Repairs Deductions before Income Taxes	$ (5,445,416)	$ (5,292,728)	$ (152,688)
4	State Income Tax Rate	9.99%	9.99%	9.99%
5	State Income Taxes	$ 543,997	$ 528,744	$ 15,254
6	Adjustment to Repairs Deduction after State Income Taxes	$ (4,901,419)	$ (4,763,985)	$ (137,434)
7	Federal Income Tax Rate	21.00%	21.00%	21.00%
8	Federal Income Taxes	$ 1,029,298	$ 1,000,437	$ 28,861
9	Income Tax Expense Impacts	$ 1,573,295	$ 1,529,180	$ 44,115
10	Adjustment to State and Federal Income Tax Expense for Repairs Deductions	$ (1,573,295)	$ (1,529,180)	$ (44,115)

Notes and Source:

Line 1: Direct Testimony of Aqua Witness Christina L. Saball, Page 5 and Schedule F-2 from Exhibits 1-A and 1-B

Line 2, Col. A: Per Company response to OCA-X-27 and Rebuttal Testimony of Company witness Christine L. Saball, page 5

	Repair Deductions Updated	1st Year Rates Capital Budget 2022	2nd Year Rates As Filed 2023	3rd Year Rates As Filed 2024	3 Year Average
11	Estimated RTC Capital Spend	$ 168,836,249	$ 164,500,000	$ 164,500,000	$ 165,945,416
12	Less Estimated AFUDC	$ (1,440,000)	$ (1,440,000)	$ (1,440,000)	$ (1,440,000)
13	Net Repair Deductions Claimed or Expected to be claimed on Income Tax Returns	$ 167,396,249	$ 163,060,000	$ 163,060,000	$ 164,505,416

Line 3: Line 2 - Line 1

Line 9: Line 5 + Line 8

Line 10: -Line 9

Cols. B and C, Line 1: Breakout between Water and Wastewater

		Water	Wastewater	Total
14	Repairs Deduction Reflected in Filing Broken Out Between Water and Wastewater	$ (154,600,000)	$ (4,460,000)	$ (159,060,000)
15	Total Company Repairs Deduction Reflected in Filing	$ (159,060,000)	$ (159,060,000)	$ (318,120,000)
16	Percentage	97.20%	2.80%	100.00%
17	Total Repairs Deduction Projected to be Incurred	$ (164,505,416)	$ (164,505,416)	$ (164,505,416)
18	Repairs Deduction Projected to be Incurred Broken Out Between Water and Wastewater	$ (159,892,728)	$ (4,612,688)	$ (164,505,416)

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Line No.	Description	Water	Base Wastewater	Limerick Wastewater	East Bradford Wastewater	Cheltenham Wastewater	East Norriton Wastewater	New Garden Wastewater
		(A)	(B)	(C)	(D)	(E)	(F)	(G)
1	Increase (Decrease) to State Income Tax Expense	$ (580,610)	$ (31,041)	$ (9,035)	$ (841)	$ (7,398)	$ (3,959)	$ (4,726)
2	Increase (Decrease) to Federal Income Tax Expense	$ (1,098,574)	$ (58,734)	$ (17,094)	$ (1,592)	$ (13,997)	$ (7,491)	$ (8,941)
3	Increase (Decrease) to Income Tax Expense	$ (1,679,184)	$ (89,775)	$ (26,129)	$ (2,433)	$ (21,395)	$ (11,450)	$ (13,667)

Notes and Source:
See pages 2 through 8 of this schedule

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 8
Revised for Surrebuttal

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 3,809,175,354	Schedule B , page 1
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 1
3	Going-Level Interest Deduction for Tax Purposes	$ 76,183,507	L1 x L2
4	Interest Deduction per Company	$ 70,371,594	Note A
5	Decrease in Deductible Interest	$ 5,811,913	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (580,610)	L5 x L6
8	Federal Taxable Income	$ 5,231,303	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (1,098,574)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (1,679,184)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-A, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Base Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 8
Revised for Surrebuttal

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 198,337,990	Schedule B , page 2
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 1
3	Going-Level Interest Deduction for Tax Purposes	$ 3,966,760	L1 x L2
4	Interest Deduction per Company	$ 3,656,035	Note A
5	Decrease in Deductible Interest	$ 310,725	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (31,041)	L5 x L6
8	Federal Taxable Income	$ 279,683	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (58,734)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (89,775)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-B, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Limerick Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 57,735,861	Schedule B , page 3
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 1,154,717	L1 x L2
4	Interest Deduction per Company	$ 1,064,281	Note A
5	Decrease in Deductible Interest	$ 90,437	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (9,035)	L5 x L6
8	Federal Taxable Income	$ 81,402	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (17,094)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (26,129)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-C, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
East Bradford Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 5,376,205	Schedule B , page 4
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 107,524	L1 x L2
4	Interest Deduction per Company	$ 99,102	Note A
5	Decrease in Deductible Interest	$ 8,422	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (841)	L5 x L6
8	Federal Taxable Income	$ 7,580	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (1,592)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (2,433)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-D, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Cheltenham Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 6 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 47,252,177	Schedule B , page 5
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 945,044	L1 x L2
4	Interest Deduction per Company	$ 870,992	Note A
5	Decrease in Deductible Interest	$ 74,052	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (7,398)	L5 x L6
8	Federal Taxable Income	$ 66,654	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (13,997)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (21,395)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-E, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
East Norriton Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 7 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 25,303,104	Schedule B , page 6
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 506,062	L1 x L2
4	Interest Deduction per Company	$ 466,431	Note A
5	Decrease in Deductible Interest	$ 39,631	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (3,959)	L5 x L6
8	Federal Taxable Income	$ 35,672	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (7,491)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (11,450)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-F, Schedule A-1

Aqua Pennsylvania, Inc.
Income Tax Expense - Interest Synchronization

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
New Garden Wastewater
Schedule C-4
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 8 of 8

Line No.	Description	Amount (A)	Reference
1	Adjusted Rate Base, per OCA	$ 30,237,226	Schedule B , page 7
2	Weighted Cost of Debt, per OCA	2.00%	Per OCA - Sch. D, page 2
3	Going-Level Interest Deduction for Tax Purposes	$ 604,745	L1 x L2
4	Interest Deduction per Company	$ 557,441	Note A
5	Decrease in Deductible Interest	$ 47,303	L3 - L4
6	State Income Tax Rate	9.99%	
7	Increase to State Income Tax	$ (4,726)	L5 x L6
8	Federal Taxable Income	$ 42,578	L5 + L7
9	Federal Income Tax Rate	21.00%	
10	Increase to Federal Income Tax Expense	$ (8,941)	L8 x L9
11	Overall Increase (Decrease) to Income Tax Expense	$ (13,667)	L7 + L10

Notes and Source:
Note A: Aqua filing, Exhibit 1-G, Schedule A-1

Aqua Pennsylvania, Inc.
General Inflation

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-5
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Total Company (A)	Water Operations (B)	Wastewater Operations (C)	Limerick Wastewater (D)	East Bradford Wastewater (E)	Cheltenham Wastewater (F)	East Norriton Wastewater (G)	New Garden Wastewater (H)
1	Remove General Inflation for the period April 1, 2021 - March 31, 2022	$ (540,322)	$ (437,288)	$ (72,763)	$ (11,705)	$ (3,434)	$ (4,385)	$ (4,357)	$ (6,390)
2	Remove General Inflation for the period April 1, 2022 - March 31, 2023	$ (529,573)	$ (427,047)	$ (72,605)	$ (11,570)	$ (3,394)	$ (4,334)	$ (4,307)	$ (6,316)
3	Total Adjustment to Remove General Inflation	$ (1,069,895)	$ (864,335)	$ (145,368)	$ (23,275)	$ (6,828)	$ (8,719)	$ (8,665)	$ (12,705)

Notes and Source:
Col B: Exhibit 1-A, Schedule C-4.1 from the Company's filing
Col C: Exhibit 1-B, Schedule C-4.1 from the Company's filing
Col D: Exhibit 1-C, Schedule C-4.1 from the Company's filing
Col E: Exhibit 1-D, Schedule C-4.1 from the Company's filing
Col F: Exhibit 1-E, Schedule C-4.1 from the Company's filing
Col G: Exhibit 1-F, Schedule C-4.1 from the Company's filing
Col H: Exhibit 1-G, Schedule C-4.1 from the Company's filing

Aqua Pennsylvania, Inc.
Revenue for Post-COVID Customer Metered Water Sales

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-6
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Per Company (A)	Per OCA (B)	Adjustment (C) = (B) - (A)
	Metered Water Sales Revenue			
1	Residential	$ (11,028,890)	$ (8,271,668)	$ 2,757,223
2	Commercial	$ 9,747,027	$ 9,747,027	$ -
3	Public Authority	$ 1,217,224	$ 1,217,224	$ -
4	Total Adjustment to Metered Water Sales	$ (64,639)	$ 2,692,584	$ 2,757,223

Notes and Source:
Col. A: Exhibit 1-A, Schedule B-7 from the Company's filing
Col. B: Allowance of 75% of Company adjustment, reflecting continuing higher residential water usage into the FPFTY

Aqua Pennsylvania, Inc.
Purchased Power Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-7
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	OCA Adjustment (A)
1	Adjustment to Purchased Power Expense related to Post-COVID Customer Metered Water Sales (Line 8)	$ 96,312

Notes and Source:

Per Aqua Exhibit 1-A, Schedule 6.1, Exhibit 5-A, Part II, Schedule 5, and Exhibit 5-A, Part II, Schedule 6, Page 2:

2	Total Purchased Power Expense in FPFTY (Aqua Exhibit 1-A, Schedule 6.1)	$ 8,182,196
3	Total Residential Metered Water Consumption (Aqua Exhibit 5-A, Part II, Schedule 5, Page 1)	190,268,063,000
4	Purchased Power Expense per Gallon (Line 2 / Line 3)	$ 0.00004300
5	Company COVID-19 Residential Metered Water Consumption Adjustment (Exhibit 5-A, Part II, Schedule 6, Page 2)	(8,958,549,000)
6	OCA Residential Metered Water Consumption Allowance	(6,718,911,750)
7	Gallons Added back to Residential Metered Water Sales (Line 6 - Line 5)	2,239,637,250
8	Adjustment to Purchased Power Expense related to Post-COVID Customer Metered Water Sales (Line 4 x Line 7)	96,312

Aqua Pennsylvania, Inc.
Chemicals Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-8
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	OCA Adjustment (A)
1	Adjustment to Chemicals Expense related to Post-COVID Customer Metered Water Sales (Line 8)	$ 66,787

Notes and Source:

Per Aqua Exhibit 1-A, Schedule 6.2, Exhibit 5-A, Part II, Schedule 5, and Exhibit 5-A, Part II, Schedule 6, Page 2:

2	Total Chemicals Expense in FPFTY (Aqua Exhibit 1-A, Schedule 6.2)	$ 5,673,915
3	Total Residential Metered Water Consumption (Aqua Exhibit 5-A, Part II, Schedule 5, Page 1)	190,268,063,000
4	Chemicals Expense per Gallon (Line 2 / Line 3)	$ 0.00002982
5	Company COVID-19 Residential Metered Water Consumption Adjustment (Exhibit 5-A, Part II, Schedule 6, Page 2)	(8,958,549,000)
6	OCA Residential Metered Water Consumption Allowance	(6,718,911,750)
7	Gallons Added back to Residential Metered Water Sales (Line 6 - Line 5)	2,239,637,250
8	Adjustment to Chemicals Expense related to Post-COVID Customer Metered Water Sales (Line 4 x Line 7)	66,787

Aqua Pennsylvania, Inc.
Universal Service Program Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-9
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Water Operations (A)	Wastewater Operations (B)	Total Company (C)
1	Adjustment to Increase Operating Expenses for the Universal Service Program	$ -	$ -	$ -

Notes and Source:
See Direct Testimony of OCA Witness Roger Colton

Aqua Pennsylvania, Inc.
Adverstising Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule C-10
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Per Aqua HTY 3/31/2021 (A)	Per Aqua FTY 3/31/2022 (B)	Per Aqua FPFTY 3/31/2023 (C)	Per OCA FPFTY 3/31/2023 (D)	OCA Adjustment (E) = (D) - (C)
	Water					
1	Public Health and Safety	$ 279,803	$ 284,701	$ 288,495	$ 288,495	$ -
2	Conservation of Energy	$ -	$ -	$ -	$ -	$ -
3	Explanation of Billing Practicies, Rates, Rules, and Regulations	$ -	$ -	$ 75,000	$ 25,000	$ (50,000)
4	Provision of Factual and Objective Data Programs	$ -	$ -	$ -	$ -	$ -
5	Other Advertising Programs	$ 4,091	$ 4,163	$ 5,315	$ 5,315	$ -
6	Total	$ 283,894	$ 288,864	$ 368,810	$ 318,810	$ (50,000)
	Increase over Previous Year:					
7	Dollar Amount		$ 4,970	$ 79,946		
8	Percent Increase		1.75%	27.68%		
	Wastewater					
9	Public Health and Safety	$ -	$ -	$ -	$ -	$ -
10	Conservation of Energy	$ -	$ -	$ -	$ -	$ -
11	Explanation of Billing Practicies, Rates, Rules, and Regulations	$ -	$ -	$ 7,500	$ 2,500	$ (5,000)
12	Provision of Factual and Objective Data Programs	$ -	$ -	$ -	$ -	$ -
13	Other Advertising Programs	$ -	$ -	$ -	$ -	$ -
14	Total	$ -	$ -	$ 7,500	$ 2,500	$ (5,000)
	Increase over Previous Year:					
15	Dollar Amount		$ -	$ 7,500		
16	Percent Increase		0.00%	0.00%		

Notes and Source:
Company response to I&E-RE-33-D

Aqua Pennsylvania, Inc.
Payroll Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 5

Line No.	Description	Water Amount (A)	Wastewater Amount (B)	Total (C)
1	OCA Adjustment to Payroll Expense for Vacant Positions	$ (119,358)	$ (6,855)	$ (126,213)
2	OCA Adjustment to Payroll Expense for Non-Union Seasonal Employees	$ (147,673)	$ (12,487)	$ (160,160)
3	Total OCA Adjustment to Payroll Expense	$ (267,031)	$ (19,342)	$ (286,373)

Notes and Source

Line 1: See pages 2 and 3
Line 2: See pages 4 and 5

Aqua Pennsylvania, Inc.
Payroll Expense - Water

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 5

Line No.	Description	Per Company 3/31/2023 Amount	Per OCA 3/31/2023 Amount	OCA Adjustment
		(A)	(B)	(C)
	Non-Union Payroll			
1	Gross Payroll	$ 21,495,994	$ 21,423,811	$ (72,184)
2	Capital Payroll	$ 6,100,063	$ 6,079,578	$ (20,484)
3	Non-Operating Payroll	$ 333,175	$ 332,056	$ (1,119)
4	Expensed Non-Union Payroll Expense	$ 15,062,757	$ 15,012,176	$ (50,581)
	Union Payroll			
5	Gross Payroll	$ 31,871,426	$ 31,770,693	$ (100,733)
6	Capital Payroll	$ 9,782,358	$ 9,751,440	$ (30,918)
7	Non-Operating Payroll	$ 328,348	$ 327,311	$ (1,038)
8	Expensed Union Payroll Expense	$ 21,760,720	$ 21,691,942	$ (68,777)
9	Total Payroll Expense	$ 36,823,476	$ 36,704,118	$ (119,358)

Notes and Source

Col. A: Amounts from Schedule C-4.5 from Aqua PA filing

Col. B: Amounts from OCA Highly Confidential workpaper based on a 2.88% vacancy rate per the response to I&E-RE-22-D (calculated below):

	Description	Amount	
10	Authorized Regular Hours	1,208,480	
11	Actual Regular Hours	1,173,669	
12	Vacancy Rate	34,811	2.88%

Aqua Pennsylvania, Inc.
Payroll Expense - Wastewater - Base

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 3 of 5

Line No.	Description	Per Company 3/31/2023 Amount (A)	Per OCA 3/31/2023 Amount (B)	OCA Adjustment (C)
	Non-Union Payroll			
1	Gross Payroll	$ 1,198,973	$ 1,194,947	$ (4,026)
2	Capital Payroll	$ 188,026	$ 187,395	$ (631)
3	Non-Operating Payroll	$ 6,468	$ 6,446	$ (22)
4	Expensed Non-Union Payroll Expense	$ 1,004,479	$ 1,001,106	$ (3,373)
	Union Payroll			
5	Gross Payroll	$ 1,105,986	$ 1,102,491	$ (3,496)
6	Capital Payroll	$ 2,393	$ 2,385	$ (8)
7	Non-Operating Payroll	$ 2,009	$ 2,003	$ (6)
8	Expensed Union Payroll Expense	$ 1,101,584	$ 1,098,103	$ (3,482)
9	Total Payroll Expense	$ 2,106,063	$ 2,099,209	$ (6,855)

Notes and Source

Col. A: Amounts from Schedule C-4.5 from Aqua PA filing

Col. B: Amounts from OCA Highly Confidential workpaper based on a 2.88% vacancy rate per the response to I&E-RE-22-D (calculated below):

	Description	Amount	
10	Authorized Regular Hours	1,208,480	
11	Actual Regular Hours	1,173,669	
12	Vacancy Rate	34,811	2.88%

Aqua Pennsylvania, Inc.
Payroll Expense - Water - Seasonal Employee Count

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 4 of 5

Line No.	Description	Per Company 3/31/2023 Amount (A)	Per OCA 3/31/2023 Amount (B)	OCA Adjustment (C)	Reference
1	Authorized Non-Union Seasonal Employees	33	11		
2	FPFTY Payroll Expense Per Non-Union Seasonal Employee	$ 7,280	$ 7,280		
3	FPFTY Payroll Expense For Non-Union Seasonal Employees	$ 240,240	$ 80,080	$ (160,160)	
4	Allocation to Water Operations			92.20%	Line 6
5	FPFTY Payroll Expense For Non-Union Seasonal Employees - Water Operations			$ (147,673)	

Notes and Source

Col. A: Amounts from Exhibit 2, Schedule 2 from Company filing
Col. B: OCA seasonal employee level reflects the actual non-union seasonal positions as of June 30, 2021 per I&E-RE-97-D

	Description	Amount	Ratio	Reference
6	FPFTY Water Non-Union Gross Payroll Expense	$21,495,994	92.20%	Aqua Sch. C-4.5
7	FPFTY Sewer Non-Union Gross Payroll Expense	$ 1,817,730	7.80%	Aqua Sch. C-4.5
8	Total FPFTY Non-Union Gross Payroll Expense	$23,313,724	100.00%	
	Portion of Non-Union Seasonal Payroll Expense Allocated to Water Operations			
9	Authorized Non-Union Seasonal Employees	33		
10	FPFTY Payroll Expense Per Non-Union Seasonal Position	$ 7,280		
11	FPFTY Payroll Expense For Non-Union Seasonal Positions	$ 240,240		
12	Percentage of Non-Union Seasonal Positions Allocated to Water Operations	92.20%	Line 6	
13	Non-Union Seasonal Payroll Expense Allocated to Water Operations	$ 221,509		

Aqua Pennsylvania, Inc.
Payroll Expense - Wastewater - Base - Seasonal Employee Count

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Wastewater Operations
Schedule C-11
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 5 of 5

Line No.	Description	Per Company 3/31/2023 Amount (A)	Per OCA 3/31/2023 Amount (B)	OCA Adjustment (C)	Reference
1	Authorized Non-Union Seasonal Employees	33	11		
2	FPFTY Payroll Expense Per Non-Union Seasonal Employee	$ 7,280	$ 7,280		
3	FPFTY Payroll Expense For Non-Union Seasonal Employees	$ 240,240	$ 80,080	$ (160,160)	
4	Allocation to Wastewater Operations			7.80%	Line 7
5	FPFTY Payroll Expense For Non-Union Seasonal Employees - Wastewater Operations			$ (12,487)	

Notes and Source

Col. A: Amounts from Exhibit 2, Schedule 2 from Company filing
Col. B: OCA seasonal employee level reflects the actual non-union seasonal positions as of June 30, 2021 per I&E-RE-97-D

	Description	Amount	Ratio	Reference
6	FPFTY Water Non-Union Gross Payroll Expense	$21,495,994	92.20%	Aqua Sch. C-4.5
7	FPFTY Sewer Non-Union Gross Payroll Expense	$ 1,817,730	7.80%	Aqua Sch. C-4.5
8	Total FPFTY Non-Union Gross Payroll Expense	$23,313,724	100.00%	
	Portion of Non-Union Seasonal Payroll Expense Allocated to Wastewater Operations			
9	Authorized Non-Union Seasonal Employees	33		
10	FPFTY Payroll Expense Per Non-Union Seasonal Position	$ 7,280		
11	FPFTY Payroll Expense For Non-Union Seasonal Positions	$ 240,240		
12	Percentage of Non-Union Seasonal Positions Allocated to Wastewater Operations	7.80%	Line 7	
13	Non-Union Seasonal Payroll Expense Allocated to Wastewater Operations	$ 18,731		

Aqua Pennsylvania, Inc.
Stock-Based Compensation

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule C-12
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Water Amount (A)	Wastewater Amount (B)	Total (C)	Reference
1	Stock Options Compensation	$ (105,480)	$ (105,480)		
2	Restricted Stock Units	$ (282,019)	$ (282,019)		
3	Performance Share Units	$ (458,994)	$ (458,994)		
4	Total Stock-Based Compensation	$ (846,493)	$ (846,493)		
5	Allocation to Water and Wastewater Operations	92.20%	7.80%		Lines 7 & 8
6	OCA Adjustment to Stock-Based Compensation Expense	$ (780,493)	$ (66,000)	$ (846,493)	

Notes and Source

Lines 1-3: Amounts from the response to I&E-RE-24-D

	Description	Amount	Ratio	Reference
7	FPFTY Water Non-Union Gross Payroll Expense	$21,495,994	92.20%	Aqua Sch. C-4.5
8	FPFTY Sewer Non-Union Gross Payroll Expense	$ 1,817,730	7.80%	Aqua Sch. C-4.5
9	Total FPFTY Non-Union Gross Payroll Expense	$23,313,724	100.00%	

Aqua Pennsylvania, Inc.
Payroll Tax Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule C-13
Docket Nos. R-2021-3027385 and R-2021-3027386
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Line No.	Description	Reference	Payroll Expense Adjustment (A)	FICA Tax 6.20% (B)	Medicare Tax 1.45% (C)	FUTA Tax 0.60% (D)	SUTA Tax 4.39% (E)	Payroll Tax Expense Adjustment (F)
	Water Operations							
1	OCA Adjustment to Payroll Expense for Non-Union Seasonal Employees	A	$ (147,673)	$ (9,156)	$ (2,141)	$ (886)	$ (6,487)	$ (18,670)
2	OCA Adjustment to Non-Union Payroll Expense - Vacancy Rate	A	$ (50,581)	$ (3,136)	$ (733)	$ (303)	$ (2,222)	$ (6,394)
3	OCA Adjustment to Union Payroll Expense - Vacancy Rate	A	$ (68,777)	$ (4,264)	$ (997)	$ (413)	$ (3,021)	$ (8,695)
4	OCA Adjustment to Stock-Based Compensation Expense	B	$ (780,493)	$ (48,391)	$ (11,317)	$ -	$ -	$ (59,708)
5	Total of OCA Adjustments to Water Operations		$ (1,047,524)	$ (64,947)	$ (15,188)	$ (1,602)	$ (11,730)	$ (93,467)
	Wastewater Operations							
6	OCA Adjustment to Payroll Expense for Non-Union Seasonal Employees	A	$ (12,487)	$ (774)	$ (181)	$ (75)	$ (549)	$ (1,579)
7	OCA Adjustment to Non-Union Payroll Expense - Vacancy Rate	A	$ (3,373)	$ (209)	$ (3)	$ (20)	$ (148)	$ (380)
8	OCA Adjustment to Union Payroll Expense - Vacancy Rate	A	$ (3,482)	$ (216)	$ (50)	$ (21)	$ (153)	$ (440)
9	OCA Adjustment to Stock-Based Compensation Expense	B	$ (66,000)	$ (4,092)	$ (957)	$ -	$ -	$ (5,049)
10	Total of OCA Adjustments to Wastewater Operations		$ (85,342)	$ (5,291)	$ (1,191)	$ (116)	$ (850)	$ (7,448)
11	Total Adjustment to Payroll Tax Expense	L5 + L10	$ (1,132,866)	$ (70,238)	$ (16,379)	$ (1,718)	$ (12,580)	$ (100,915)

Notes and Source

A: See Schedule C-11
B: See Schedule C-12

Aqua Pennsylvania, Inc.
Employee Group Insurance

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule C-14
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Per Company	Per OCA	OCA Adjustment
	Water Operations	(A)	(B)	(C)
1	Medical/Prescription/Vision	$ 7,807,216	$ 7,776,788	$ (30,428)
2	Life/ADD/LTD	$ 565,649	$ 563,445	$ (2,205)
3	Dental	$ 162,148	$ 161,516	$ (632)
4	Total Group Insurance Expense	$ 8,535,013	$ 8,501,748	$ (33,265)
5	Captalization Rate	30%	30%	
6	Capitalized portion not charged to operating expense	$ (2,560,504)	$ (2,550,524)	$ 9,979
7	O&M Group Insurance Expense for Water Operations	$ 5,974,509	$ 5,951,224	$ (23,285)
	Wastewater Operations			
8	Wastewater Intracompany Benefits Charged to O&M	$ 1,263,638	$ 1,259,525	$ (4,113)

Notes and Source

Col. A, lines 1-7: Amounts from Exhibit 1-A, Schedule C-8.1 from Aqua's filing
Col. A, line 8: Amount from Exhibit 1-B Wastewater Base, Schedule C-8.1 from Aqua's filing
Col. B, lines 1-4: Amounts from OCA Highly Confidential workpaper based on a 2.88% vacancy rate per the response to I&E-RE-22-D
Col. B, line 8 calculated below:

	Description	Per Company*	Per OCA	Reference
9	Expensed Non-Union Payroll Expense	$ 1,004,479	$ 1,001,106	OCA Sch. C-11
10	Expensed Union Payroll Expense	$ 1,101,584	$ 1,098,103	OCA Sch. C-11
11	Total Payroll Expense	$ 2,106,063	$ 2,099,209	
12	Intercompany Benefits Rate	60%	60%	Exh. 1-B Wastewater Base from Aqua's filing
13	Wastewater Intracompany Benefits Charged to O&M	$ 1,263,638	$ 1,259,525	

* Company amounts from Schedule C-4.5 from Aqua's water and wastewater base filings

Aqua Pennsylvania, Inc.
Insurance Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule C-15
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Per Company (A)	Per OCA (B)	OCA Adjustment (C)
	Water Operations			
1	General Liability	$ 3,980,563	$ 3,920,631	$ (59,932)
2	Workers Compensation	$ 1,093,460	$ 1,076,997	$ (16,463)
3	Vehicle	$ 236,021	$ 232,468	$ (3,554)
4	Other (Exec Risk, Property, Surety Bond)	$ 1,467,232	$ 1,445,141	$ (22,091)
5	Total Insurance Expense for Water Operations	$ 6,777,277	$ 6,675,237	$ (102,040)
6	Captalization Rate	30%	30%	
7	Capitalized portion not charged to operating expense	$ (2,033,183)	$ (2,002,571)	$ 30,612
8	O&M Insurance Expense for Water Operations	$ 4,744,094	$ 4,672,666	$ (71,428)
	Wastewater Operations			
	General Liability	$ 47,069	$ 46,361	$ (709)
9	Workers Compensation	$ 4,380	$ 4,314	$ (66)
10	Other (Exec Risk, Property, Surety Bond)	$ 15,901	$ 15,662	$ (239)
11	Total Insurance Expense for Wastewater Operations	$ 67,350	$ 66,336	$ (1,014)
12	Captalization Rate	30%	30%	
13	Capitalized portion not charged to operating expense	$ (20,205)	$ (19,901)	$ 304
14	O&M Insurance Expense for Wastewater Operations	$ 47,145	$ 46,435	$ (710)

Notes and Source

Col. A, lines 1-8: Amounts from Exhibit 1-A, Schedule C-4.6 from Aqua's filing
Col. A, lines 9-14: Amounts from Exhibit 1-B Wastewater Base, Schedule C-4.6 from Aqua's filing
Col. B: OCA amounts based on a 3-year average of actual insurance expense charged to Aqua per the response to I&E-RE-40-D and calculated below:

	Description	FY 2018	FY 2019	FY 2020	FY 2021	3-Year Average
15	O&M Insurance	$ 5,722,844	$ 5,411,350	$ 5,793,145	$ 6,460,812	
16	Year-Over-Year Increase/(Decrease)		$ (311,494)	$ 381,795	$ 667,667	
17	Year-Over-Year Percentage Increase/(Decrease)		-5.44%	7.06%	11.53%	4.38%

	Water Operations	FTY Amount Per Company*	3-Year Average Increase	FPFTY Insurance Expense
18	General Liability	$ 3,756,142	4.38%	$ 3,920,631
19	Workers Compensation	$ 1,031,812	4.38%	$ 1,076,997
20	Vehicle	$ 222,715	4.38%	$ 232,468
21	Other (Exec Risk, Property, Surety Bond)	$ 1,384,511	4.38%	$ 1,445,141
22	Total Insurance Expense for Water Operations	$ 6,395,180		$ 6,675,237
	Wastewater Operations			
23	General Liability	$ 44,416	4.38%	$ 46,361
24	Workers Compensation	$ 4,133	4.38%	$ 4,314
25	Other (Exec Risk, Property, Surety Bond)	$ 15,004	4.38%	$ 15,662
26	Total Insurance Expense for Wastewater Operations	$ 63,553		$ 66,336

* Company FTY amounts from Schedule C-4.6 from Aqua's water and wastewater base filings

Aqua Pennsylvania, Inc.
Rate Case Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water and Wastewater Operations
Schedule C-16
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1
Revised for Surrebuttal

Line No.	Description	Allocation Factor	Per Company	Per OCA	OCA Adjustment
		(A)	(B)	(C)	(D) = (C) -(B)
1	Engineering, Cost Allocation and Depreciation		$ 400,000	$ 400,000	$ -
2	Legal		$ 1,200,000	$ 1,200,000	$ -
3	Other Consultants		$ 100,000	$ 40,068	$ (59,932)
4	Rate of Return		$ 95,000	$ 95,000	$ -
5	Notices and Postage		$ 340,000	$ 340,000	$ -
6	Miscellaneous		$ 65,000	$ -	$ (65,000)
7	Total		$ 2,200,000	$ 2,075,068	$ (124,932)
	Allocation of Total Rate Case Expense				
8	Water	91.51%	$ 2,013,220	$ 1,898,895	$ (114,325)
9	Wastewater	8.49%	$ 186,780	$ 176,173	$ (10,607)
10	Normalization Period		3 Years	3.3 Years	
	Annual Amortization:				
11	Water Operations		$ 671,073	$ 575,423	$ (95,651)
12	Wastewater Operations		$ 62,260	$ 53,386	$ (8,874)

Notes and Source:
Col. B: Exhibit 1-A, Schedule C-4.4 from the Company's filing
Col. C: Company response to OCA-IV-23
Col. C, Line 3: Rebuttal Testimony of Company witness Christopher E. Manning, page 6

Aqua Pennsylvania, Inc.
Non-Rate Case Legal Expense

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Water Operations
Schedule C-17
Docket Nos. R-2021-3027385 and R-2021-3027386

Line No.	Description	Aqua Present Rates 3/31/2023 Amount (A)	OCA Proposed (B)	OCA Adjustment (C)
1	Legal Expense Claim	$ 644,475	$ 619,494	$ (24,981)

Notes and Source:
Col. A: Aqua Exhibit 1-A, Schedule C-9.1, Account 6338
Col. B: See page 2 of this schedule

Aqua Pennsylvania, Inc.
Non-Rate Case Legal Expense

Exhibit LA-6
Water Operations
Schedule C-17

Fully Projected Future Test Year Ending March 31, 2023

Docket Nos. R-2021-3027385 and R-2021-3027386
Page 2 of 2

Line No.	2019	Month	Month Total	2020	Month	Month Total
1		January	$ 92,259		January	$ 23,273
2		February	$ 1,243		February	$ 149,454
3		March	$ 143,401		March	$ 110,599
4		April	$ 8,956		April	$ 3,584
5		May	$ 12,915		May	$ 29,890
6		June	$ 21,386		June	$ 57,970
7		July	$ 46,743		July	$ 13,384
8		August	$ 3,877		August	$ 52,183
9		September	$ 20,729		September	$ 1,698
10		October	$ 102,560		October	$ 30,566
11		November	$ (41,042)		November	$ 39,849
12		December	$ 132,523		December	$ 75,293
13		Total 2019	$ 545,550		Total 2020	$ 587,742
14				Two Year Average		$ 566,646

	April 2019-March 2020		April 2020-March 2021		
	Month	Month Total		Month	Month Total
15	April	$ 8,956		April	$ 3,584
16	May	$ 12,915		May	$ 29,890
17	June	$ 21,386		June	$ 57,970
18	July	$ 46,743		July	$ 13,384
19	August	$ 3,877		August	$ 52,183
20	September	$ 20,729		September	$ 1,698
21	October	$ 102,560		October	$ 30,566
22	November	$ (41,042)		November	$ 39,849
23	December	$ 132,523		December	$ 75,293
24	January	$ 23,273		January	$ 55,292
25	February	$ 149,454		February	$ 34,990
26	March	$ 110,599		March	$ 252,318
27	Total	$ 591,973		Total	$ 647,015
28			Two Year Average		$ 619,494

Notes and Source:

Company response to OCA-IV-26
Per the Company's response to OCA-IV-25, Aqua records all non-rate case legal expense in account 633800 for water operations

Aqua Pennsylvania, Inc.
Supplemental Executive Retirement Program (SERP)

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-18
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1

Line No.	Description	Account Number	Water Amount	Wastewater Amount	Total	Reference
		(A)	(B)	(C)	(D)	
1	WT-A&G Empl Benefits - Nonqual Service Costs	604/704	$ (97,014)	$ -	$ (97,014)	A
2	Management Fee - (Non Qual Plan/SERP)	634/734	$ (598,598)	$ (57,050)	$ (655,648)	A
3	Total SERP Expense		$ (695,612)	$ (57,050)	$ (752,662)	

Notes and Source

A: Amounts from the supplemental response to OCA-VII-46

Aqua Pennsylvania, Inc.
Water Miscellaneous Revenue Adjustment from Aqua's Rebuttal Filing

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
Schedule C-19
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1
Added for Surrebuttal

Line No.	Description	Amount (A)
1	Adjustment to Increase Miscellaneous Revenues to Normalize the Impact of COVID on Miscellenaous Revenues	$ 150,172

Notes and Source:
Rebuttal Testimony of Company Witness Erin M. Feeney, page 30 and Company Rebuttal Exhibit 1-A(a), Schedule B-9

Aqua Pennsylvania, Inc.
New Garden Late Payment Revenue from Aqua's Rebuttal Filing

Fully Projected Future Test Year Ending March 31, 2023

Exhibit LA-6
New Garden Wastewater
Schedule C-20
Docket Nos. R-2021-3027385 and R-2021-3027386
Page 1 of 1
Added for Surrebuttal

Line No.	Description	Amount (A)
1	Adjustment to Increase Revenue for Late Payment Revenuue	$ 17,382

Notes and Source:
Rebuttal Testimony of Company Witness Erin M. Feeney, page 31 and Company Rebuttal Exhibit 1-G(g), Schedule B-5

Monthly Revenue	$ 1,448.50
Number of Months	12
Annual Revenue	$ 17,382

Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc.
Docket Nos. R-2021-3027385 (Water) and R-2021-3027386 (Wastewater)
Exhibit LA-7
Copies of Non-Confidential Material Referenced in the
Direct Testimony of
Ralph C. Smith

Document	Subject	Confidential	No. of Pages	Page No.
I&E-RE-97-D Revised	Number of Employees	No	2	2 - 3
OCA-X-10	Cost savings related to the Covid-19 pandemic, by account and by amount, in total and separately for Aqua's water and wastewter utilities.	No	1	4
Management and Operations Audit excerpt	Excerpt of Management and Operations Audit of the Philadelphia Suburban Water Company, issued September 1998 regarding executive compensation.	No	4	5 - 8
	Total Pages Including this Page		8	

Witness: Erin M. Feeney
Original Date: 11/4/2021
Revised Date: 11/29/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

BUREAU OF INVESTIGATION AND ENFORCEMENT

DATA REQUEST SET RE

DOCKET NOS. R-2021-3027385 & R-2021-3027386

I&E-RE-97-D: Reference the Company's response to I&E-RE-20-D concerning the number of employees:

A. Update of the Table in Part A with monthly data beyond the HTY ended 3/31/21 up to the most recent available month, providing the number of actual employees by month broken down by union and non-union.

B. Update of the Table in Part B with monthly data beyond the HTY ended 3/31/21 up to the most recent available month, providing the number of authorized employees by month broken down by union and non-union.

C. Specifically identify any budgeted FTY and/or FPFTY headcount amounts by year included in response to I&E-RE-20-D, Parts C and D, that are the result of any upcoming acquisitions, identify the utility to be acquired and the planned acquisition date.

RESPONSE:

A. Refer to I&E-RE-97 - Attachment 1.

B. Refer to I&E-RE-97 - Attachment 1.

C. There are no positions included in the Company's headcount or labor claim for positions related to upcoming acquisitions.

Actual

	3/31/2019	6/30/2019	9/30/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	3/31/2021	6/30/2021	9/30/2021	12/31/2021
Non-Union Full-Time	224	220	218	217	218	213	210	209	207	205	204	
Union Full-Time	339	340	337	354	351	359	351	357	352	352	350	
Total Full-Time	**563**	**560**	**555**	**571**	**569**	**572**	**561**	**566**	**559**	**557**	**554**	**0**
Regular Part-Time	6	6	5	5	5	5	5	5	5	5	5	
Co-Op	2	2	2	2	2	2	2	2	2	2	2	
Total Excluding Seasonal	**571**	**568**	**562**	**578**	**576**	**579**	**568**	**573**	**566**	**564**	**561**	**0**
Seasonal	0	31	0	0	0	0	0	0	0	11	0	0
Total	**571**	**599**	**562**	**578**	**576**	**579**	**568**	**573**	**566**	**575**	**561**	**0**

Authorized / Budgeted

	3/31/2019	6/30/2019	9/30/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	3/31/2021	6/30/2021	9/30/2021	12/31/2021
Non-Union Full-Time	226	226	226	226	218	220	220	220	224	224	224	224
Union Full-Time	343	343	343	349	361	361	361	361	361	361	361	361
Total Full-Time	**569**	**569**	**569**	**575**	**579**	**581**	**581**	**581**	**585**	**585**	**585**	**585**
Regular Part-Time	6	6	6	6	5	5	5	5	4	4	4	4
Co-Op	2	2	2	2	2	2	2	2	2	2	2	2
Total Excluding Seasonal	**577**	**577**	**577**	**583**	**586**	**588**	**588**	**588**	**591**	**591**	**591**	**591**
Seasonal		34				33				33		
Total	**577**	**611**	**577**	**583**	**586**	**621**	**588**	**588**	**591**	**624**	**591**	**591**

The Regular Part-Time, Seasonal and Co-op employees in the above table are non-union employees.
As noted in the Company's response to I&E-RE-18, seasonal positions are vacant as of March 31st of each year because the seasonal employment period runs from mid-May through mid-September.

Witness: William C. Packer
Date: 12/2/2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET X

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-X-10: From March 2020 through the most current month available, identify all amounts of cost savings related to the Covid-19 pandemic, by account and amount. Show the amounts in total and separately for Aqua's water and wastewater utilities.

RESPONSE:

Please see the below tables of select O&M Expense categories that indicated savings relative to pre-COVID levels:

Rate Division	Sewer									
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
Account Classification	**HTY vs. Avg.**	**2020 vs. Avg.**	**Est. Savings (Col. (5) - (7))**	**2021 (Oct Ytd)**	**HTY**	**2020**	**2019 - 2017 (Avg)**	**2019**	**2018**	**2017**
O&M Labor Exp Reg	25.95%	21.29%		2,504,589	2,792,740	2,689,462	1,824,861	2,217,305	1,739,114	1,518,163
O&M Employee Benefits	13.03%	16.78%		1,365,097	1,500,291	1,550,080	1,092,316	1,327,307	1,041,182	908,459
O&M Transportation	-63.06%	-65.29%		134,257	45,598	42,840	113,752	123,432	122,404	95,420
O&M Supplies	41.61%	33.53%		161,821	179,196	168,965	110,235	126,541	123,556	80,608
O&M Insurance	96.51%	51.71%		76,133	90,764	70,072	42,095	46,188	65,400	14,696
O&M Other - Comm	21.93%	22.30%		7,593	96,231	96,522	81,845	78,925	81,509	85,102
O&M Other - Office Supply	-28.10%	-13.54%	(3,468)	66,471	8,874	10,671	9,632	12,343	7,629	8,924
O&M Other - Office Utilities	107.51%	64.83%		140	133,175	105,782	51,044	64,177	42,087	46,869
O&M Other - Dues	-42.29%	49.90%		3,827	421	1,094	533	730	365	505
O&M Other - Postage	-31.60%	-46.89%	(1,384)	5,767	2,996	2,326	2,497	4,380	1,533	1,577
O&M Other - T&E	-64.38%	-64.35%	(7,710)	2,512	4,266	4,269	9,792	11,976	8,622	8,776
O&M Other - Uniforms	-70.72%	-70.23%	(5,544)	39,460	2,296	2,334	6,411	7,839	6,221	5,174
O&M Other - Lic & Permits	-38.80%	-27.23%		100	60,728	72,203	59,374	99,228	49,555	29,341
O&M Other - Pub Relations	-83.68%	-67.40%		1,390	143	285	721	874	740	550
O&M Other - Maint	1.61%	-100.00%		200	1,390		1,368	1,368		
O&M Expense Total	**19.32%**	**16.84%**	**(18,106)**	**4,369,358**	**4,919,110**	**4,816,906**	**3,405,564**	**4,122,612**	**3,289,916**	**2,804,164**

Rate Division	Water									
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
Account Classification	**HTY vs. Avg.**	**2020 vs. Avg.**	**Est. Savings (Col. (5) - (7))**	**2021 (Oct Ytd)**	**HTY**	**2020**	**2019 - 2017 (Avg)**	**2019**	**2018**	**2017**
O&M Labor Exp Reg	7.37%	6.13%		26,673,140	31,982,450	31,614,241	29,788,256	30,613,383	29,967,630	28,783,755
O&M Employee Benefits	26.51%	11.54%		16,396,175	13,888,292	12,245,097	10,978,033	11,359,428	10,132,872	11,441,800
O&M Transportation	-3.68%	-6.07%		806,446	1,018,232	992,889	1,057,108	1,084,011	1,056,357	1,030,956
O&M Supplies	20.43%	26.96%		1,791,856	2,510,342	2,646,571	2,084,546	2,284,653	1,985,094	1,983,892
O&M Other - Comm	23.36%	19.96%		997,595	1,141,126	1,109,674	925,054	1,003,139	923,645	848,379
O&M Other - Office Supply	-44.10%	-32.44%	(180,663)	249,231	229,040	276,794	409,703	407,655	412,437	409,016
O&M Other - Office Utilities	-17.65%	-4.73%	(3,500)	13,709	16,328	18,890	19,828	12,663	17,468	29,354
O&M Other - Dues	21.41%	13.82%		420,333	506,887	475,180	417,492	441,194	395,815	415,466
O&M Other - Postage	-3.90%	10.89%	(3,874)	95,958	95,443	110,134	99,317	124,221	100,914	72,816
O&M Other - T&E	-39.55%	-28.55%	(88,939)	157,693	135,955	160,683	224,895	256,702	219,838	198,144
O&M Other - Uniforms	-16.89%	3.43%	(31,838)	164,868	156,634	194,946	188,472	202,482	189,600	173,334
O&M Other - Lic & Permits	76.24%	71.84%		635,812	671,543	654,785	381,040	682,884	224,630	235,607
O&M Other - Pub Relations	10.93%	1.15%		305,886	393,706	358,995	354,912	350,485	407,626	306,626
O&M Other - Maint	-21.25%	-27.92%	(38,871)	144,089	144,023	131,824	182,895	214,779	146,636	187,269
O&M Other - Ops	112.05%	107.74%		40,065	40,635	39,809	19,163	16,011	14,134	27,345
O&M Expense Total	**12.31%**	**8.27%**	**(347,686)**	**48,892,857**	**52,930,635**	**51,030,511**	**47,130,715**	**49,053,689**	**46,194,696**	**46,143,758**

VPJ
Rec'd 9/25/98

FOCUSED MANAGEMENT

AND

OPERATIONS AUDIT

OF THE

PHILADELPHIA SUBURBAN

WATER COMPANY

PREPARED BY THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION
BUREAU OF AUDITS
MANAGEMENT AUDIT DIVISION

Issued September 1998

PHILADELPHIA SUBURBAN WATER COMPANY

FOCUSED MANAGEMENT AND OPERATIONS AUDIT

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VIII. EXECUTIVE COMPENSATION

Background

The Company has a well-organized and comprehensive executive compensation program. In 1989 it hired an independent consultant to complete a compensation analysis for use as a guide to design its incentive compensation plan. Based on the Company's objectives and competitive practices the consultant recommended establishing an annual incentive plan. An incentive compensation plan has been in place since 1990. Management and the Board of Directors (Board) feel the plan has had a positive effect on the Company's operations. The concept of having a plan tied to the Company's income performance is appropriate, as participants assume some of the same risks and rewards as the shareholders who have invested in the Company. The Annual Cash Incentive Plan has two components, a Management Incentive Program and an Employee Recognition Program.

The Management Incentive Program (MIP) includes Company officers and managers as its eligible participants. Incentive pay is computed by multiplying the individual's Target Bonus by a Company Rating factor and an Individual Rating factor. The Company Rating factor is based on the Company's performance, for which the primary measure is the Company's actual after-tax net income. The Individual Rating factor is based on the individual employee's annual performance rating. Performance objectives for each participant are established at the beginning of the year. They are primarily directed toward controlling costs, improving efficiency, increasing productivity, and enhancing customer service. The following is an example incentive pay calculation:

Annual Salary	X	Target Bonus	X	Company Rating	X	Individual Rating	=	Annual Bonus
$100,000		25%		105%		110%		$28,875

The MIP provides no bonus awards if PSC actual net income is less than 90% of the predetermined Target Net Income, nor are additional bonuses earned for results exceeding 110% of the Target Net Income.

The Employee Recognition Program was established to reward employees not eligible for the MIP. Employees are recognized for superior performance or a special action, heroic deed, or project that positively impacts the performance or image of the

Company. Awards are made from an annual pool, not to exceed $75,000, established at the beginning of the year.

The compensation consultant reviews actual executive compensation on an annual basis, as well as recommends ranges for the following year's targets. In order to perform a broad market comparison, the consultant benchmarks compensation to three groups: industrial companies, all utilities, and other investor-owned utilities. In the 1997 Executive Compensation Analysis, the Company's top five salaries were compared to those of five water utilities similar to PSWC. The consultant conducted a Proxy Analysis that compared five compensation categories: base salary, annual incentive, total cash compensation, present value- long term investment (LTI), and total direct compensation. The results indicated that annual incentive, total cash and total direct compensation were generally above the average while base salary and present value-long term investment were generally below the average. The compensation of the CEO and President exceeded the market average by the greatest amount.

The Board has an Executive Compensation and Employee Benefits Committee that oversees compensation. This committee reviews the information from compensation consultants as well as relevant data from management. The Board is also responsible for approving all executive salaries including the CEO and President. It approves of the Annual Incentive Program and the level of salaries paid. The Board has given credit to the CEO and President of the utility for its recent success and feels executive compensation should reflect that success. As a result, the CEO's current high level of compensation is tied to the current high performance of the Company. The Board believes it is appropriate that management should reap the rewards for good results, as well as take the risks for poor results. If future performance levels fall short of 90% of the Target Net Income, bonus payments will be eliminated accordingly.

Findings and Conclusions

Our examination of executive compensation at PSWC included a review of compensation objectives, program policies and procedures, assigned responsibilities, consultant proxy analysis, etc. These areas appear to be satisfactory with appropriate controls in place to adjust compensation levels upward or downward based on performance. Although the total direct compensation of PSWC executives is generally above that of executives in comparable water utilities, the level seems to be within the bounds of reasonableness given recent Company performance.

Recommendations

None.

Exhibit LA-8

Selected Pages from the Essential Utilities Proxy Statement Concerning Executive Compensation Including Stock-Based Compensation

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities

Exchange Act of 1934 (Amendment No.)

Filed by the Registrant x

Filed by a Party other than the Registrant ☐

Check the appropriate box:

☐ Preliminary Proxy Statement
☐ Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
x Definitive Proxy Statement
☐ Definitive Additional Materials
☐ Soliciting Material Pursuant to §240.14a-12

Essential Utilities, Inc.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if Other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

x No fee required.
☐ Fee computed on table below per Exchange Act Rules 14a-6(i) and 0-11.
(1) Title of each class of securities to which transaction applies:
(2) Aggregate number of securities to which transaction applies:
(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11(set forth the amount on which the filing fee is calculated and state how it was determined).
(4) Proposed maximum aggregate value of transaction:
(5) Total fee paid:
☐ Fee paid previously with preliminary materials.
☐ Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration number, or on the Form or Schedule and the date of its filing.
(1) Amount previously paid:
(2) Form, Schedule or Registration Statement No.:
(3) Filing Party:
(4) Date Filed:

March 22, 2021

To Our Shareholders

Christopher H. Franklin

For 135 years, it has been our mission to be the best possible provider of essential resources by serving the needs and expectations of our customers, shareholders, employees and the communities we serve — both today and for future generations.

On behalf of your Board of Directors, I am pleased to invite you to attend the 2021 Annual Meeting of the Shareholders of Essential Utilities, Inc. to be held virtually on Wednesday, May 5, 2021.

I'm sure you will agree that 2020 was a transformative year for the company, as well as the country. Just as the COVID-19 pandemic began to sweep the U.S. and the country started to shut down and begin social distancing, Essential completed our momentous acquisition of Peoples Natural Gas. Despite the challenges of the pandemic, I am pleased to report that the new combined company performed admirably, and we continued providing a high-level of service to more than 5 million people and invested nearly $900 million in new infrastructure.

Our first priorities during the pandemic were to ensure the health and safety of our employees, and to continue delivering utility services to our customers. Essential activated a work from home model in mid-March. For those who needed to be physically present on job sites, we provided personal protective equipment (PPE), adjusted our operations to limit employee and customer interactions and increased cleaning and sanitation practices in our open facilities.

As a vital partner in the communities we serve, we could not sit idly by while so many of our neighbors suffered. In April, we donated $290,000 to food banks in each of the 10 states we serve customers, ensuring the donations were felt on a local level. Understanding how the pandemic financially impacted our customers, we expanded our low-income assistance programs to help customers continue to receive our services. Through the Essential Foundation we were able to provide over $4 million of assistance to the communities we serve.

While addressing safety and continuous services was a priority during COVID-19, Essential continued to grow. With the acquisition of Peoples, we welcomed 740,000 customers and more than 1,500 employees in Pennsylvania, West Virginia and Kentucky. We also closed six water and wastewater system acquisitions in Ohio, North Carolina, Pennsylvania and Illinois. These acquisitions totaled nearly 4,000 water customers, more than 8,000 wastewater customers and an opening rate base of nearly $63 million.

Essential is committed to being responsible stewards of our environment, maintaining a safe, diverse, and respectful culture, and overseeing the governance of Essential with the utmost transparency. To that purpose, we have added a Diversity metric to our 2021 Short-term Incentive Plan to tie executive compensation to our diversity goals.

In the Fall of 2020, we expanded our formal Environmental, Social and Governance (ESG) reporting. Our ESG report, which can be found at www.ESG.Essential.co, details our progress on our goals, including our intention to use 100% renewable energy to power water and wastewater operations in four states by 2022, and our company-wide PFAS standard of 13 ppt in drinking water. By 2035, our goal is to reduce our emissions by 60% from our 2019 baseline. We also amplified our diversity, equity, and inclusion efforts by formalizing our commitments in a multi-year plan to nearly double our diverse supplier spend to 15% of our spend and increase employee diversity by 20% in the coming years, reflecting the diversity of the communities in which we work.

I am proud of the work we accomplished during such a challenging year. In 2021 we will proudly celebrate the 135th anniversary of our company and we look forward to all we can accomplish during the next 135 years. We hope you'll join us to hear more about Essential's bright future on May 5th.

Thank you for your confidence in Essential!

Sincerely,

Christopher H. Franklin
Chairman, President and Chief Executive Officer

Notice of Annual Meeting of Shareholders

Essential Utilities, Inc.
762 W. Lancaster Avenue
Bryn Mawr, Pennsylvania 19010

Virtual Annual Meeting of Shareholders

Wednesday, May 5, 2021 8:00am Local Time

Record Date
March 8, 2021

Due to public health concerns about COVID-19 and to support the health and safety of our shareholders and employees, this year's Annual Meeting will be conducted virtually, entirely by live audio broadcast.

To attend, go to: **www.virtualshareholdermeeting.com/ WTRG2021** and log in using the control number on your Notice of Internet Availability, proxy card or voting instruction form.

The list of shareholders will be available for inspection upon request, by contacting us at *www.essential.co/investor-relations*

Shareholders will have the same opportunities to participate as they would at an in-person meeting, with the opportunity to vote and ask questions on the matters discussed in this proxy statement.

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting of Shareholders to be held on May 5, 2021.

The Notice of Annual Meeting, Proxy Statement and 2020 Annual Report to Shareholders are available at: *www.essential.co/investor-relations*

If you encounter any difficulties accessing the virtual meeting during the check-in or meeting time, please call the technical support number that will be posted on the Virtual Shareholder Meeting login page.

Purpose

The Annual Meeting of Shareholders of Essential Utilities, Inc. (the Company) will be held for the following purposes:

1. To elect eight nominees for directors;
2. To ratify the appointment of PricewaterhouseCoopers LLP as the independent registered public accounting firm for the Company for the 2021 fiscal year;
3. To approve an advisory vote on the compensation paid to the Company's named executive officers for 2020;
4. To ratify the Amendment to the Company's Bylaws to permit shareholder access to the Company's proxy statement; and
5. To transact any other business as may properly come before the meeting or any adjournments or postponements thereof.

Who can vote

Only shareholders of record at the close of business on March 8, 2021 will be entitled to notice of, and to vote at, the meeting.

Your vote is important

We urge each shareholder to promptly sign and return the enclosed proxy card, or to use telephone or internet voting.

See our Questions and Answers about the Annual Meeting and the voting section of the proxy statement for information about voting by telephone or internet, how to revoke a proxy and how to vote your shares at the virtual annual meeting.

How to vote

Online before the meeting*
www.proxyvote.com

Online at the meeting
Attend the Annual Meeting virtually at
www.virtualshareholdermeeting.com/WTRG2021
and follow the instructions for voting

By phone*
In the U.S. or Canada
dial toll-free
1-800-690-6903

By mail
Return your proxy card
in the postage-paid
envelope provided

* You have until 11:59 p.m. (ET) on May 4, 2021 to vote through the internet or by phone, and if you are a plan participant you have until 11:59 p.m. (ET) on May 2, 2021 to vote through the internet or by phone. If you vote by Internet or by Phone, you do not need to mail back your proxy card.

By Order of the Board of Directors,

Christopher P. Luning
Secretary
March 22, 2021

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Forward-Looking Information

This document includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act) and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). Forward-looking statements are based on management's beliefs and assumptions. Various factors may cause actual results to be materially different than the suggested outcomes within forward-looking statements. Accordingly, there is no assurance that such results will be realized. For details on the uncertainties that may cause the Company's actual future results to be materially different than those expressed in our forward-looking statements, see our Annual Report on Form 10-K and Quarterly Reports on Form 10-Q filed with the Securities and Exchange Commission (SEC) and available on the SEC's website at www.sec.gov. In light of these risks, uncertainties, and assumptions, the events described in the forward-looking statements might not occur or might occur to a different extent or at a different time than described. Forward-looking statements speak only as of the date they are made. Essential Utilities, Inc. expressly disclaims an obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.

Proxy Summary

This summary highlights information contained elsewhere in this proxy statement. This summary does not contain all of the information that you should consider, and you should read the entire proxy statement before voting. For more complete information regarding the Company's 2020 performance, please review the Company's Annual Report on Form 10-K for the year ended December 31, 2020.

Summary of Matters to be Voted upon at the Annual Meeting

The following table summarizes the items that shareholders are being asked to vote on at the 2021 Annual Meeting:

Proposal	Description	Vote Recommendation	Page Reference
Proposal 1 Election of Directors	The Board of Directors of the Company (the Board of Directors or the Board) and the Corporate Governance Committee believe that the eight director nominees possess the necessary qualifications, attributes, skills, and experience to provide advice and counsel to the Company's management and effectively oversee the business and the long-term interests of our shareholders.	FOR each Director Nominee	10
Proposal 2 Ratification of Independent Accounting Firm	The Board believes the retention of PricewaterhouseCoopers LLP as the Company's independent registered public accounting firm for the 2021 fiscal year is in the best interests of the Company and its shareholders. As a matter of good corporate governance, shareholders are being asked to ratify the Audit Committee's selection of PricewaterhouseCoopers LLP.	FOR	38
Proposal 3 Advisory Vote to Approve Named Executive Officers' Compensation	The Company seeks a non-binding advisory vote to approve the compensation of its named executive officers for 2020 as described in the Compensation Discussion and Analysis (CD&A) and the compensation tables and narrative discussion. The Board values shareholders' opinions, and the Compensation Committee will take into account the outcome of the advisory vote when considering future executive compensation decisions.	FOR	40
Proposal 4 Ratification of an Amendment to the Bylaws establishing a standard for inclusion of shareholder nominees in the Company's proxy statement	The Board believes that its decision to amend the Company's Amended and Restated Bylaws, as amended, (the Bylaws) to establish a standard for proxy access for shareholders with the power to nominate a number of director candidates for inclusion in the Company's proxy statement aligns the shareholders' interests and allows for greater accountability of the directors. As a matter of good corporate governance, shareholders are being asked to ratify this Amendment.	FOR	85

What's New

- We continued to enhance our disclosures to make our proxy statement easier to read and understand.
- We responded to COVID-19 challenges. *See disclosures throughout this proxy statement.*
- We focused on our employees' health, safety, diversity and inclusion programs
- We integrated Peoples Natural Gas into our overall operations.
- The Executive Compensation Committee held in-depth discussions on the Company's strategy and compensation program, assessing the peer group, and evaluating each component of the package including base salaries, short term incentives, and long-term incentives.
- New metrics in our 2021 compensation program are aimed at incenting management to support diversity, equity, and inclusion in our organization. *See pages 64 through 67 for a summary of the extensive new compensation program changes.*

Proposal 3:
Advisory Vote to Approve Named Executive Officers' 2020 Compensation

Shareholders are entitled to an advisory (non-binding) vote on the executive compensation as described in this proxy statement for our named executive officers (sometimes referred to as Say on Pay). Currently, this vote is conducted every year. Accordingly, the following resolution is being presented by the Board of Directors at the 2021 Annual Meeting:

RESOLVED, that the compensation paid to the Company's named executive officers for 2020, as disclosed pursuant to Item 402 of Regulation S-K, including the Compensation Discussion and Analysis, compensation tables and narrative discussion, is hereby APPROVED.

This vote is non-binding. The Board of Directors and the Executive Compensation Committee, which is comprised of independent directors, expect to take into account the outcome of the vote when considering future executive compensation decisions to the extent they can determine the cause or causes of any significant negative voting results.

Before you vote

Shareholders are encouraged to read the Compensation Discussion and Analysis, the accompanying compensation tables and the related narrative disclosure.

As described in detail under our Compensation Discussion and Analysis on pages 41 through 69 of this proxy statement, our executive compensation program is designed to motivate our executives to achieve our primary goals of providing our customers with quality, cost-effective and reliable water and wastewater services and providing our shareholders with a long-term, positive return on their investment.

We believe that our executive compensation program, with its balance of short-term incentives and long-term incentives and share ownership guidelines, reward sustained performance that is aligned with the interests of our customers, employees and long-term shareholders.

Executive Compensation

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Compensation Discussion and Analysis

In this Compensation Discussion and Analysis ("CD&A"), we address our compensation philosophy and program, and compensation paid or earned by the following executive officers:

Christopher H. Franklin
Chairman, President, and Chief Executive Officer

Daniel J. Schuller
Executive Vice President, and Chief Financial Officer

Richard S. Fox
Executive Vice President, and Chief Operating Officer

Matthew Rhodes
Executive Vice President, and Chief Strategy & Corporate Development Officer

Christopher P. Luning
Executive Vice President, General Counsel, and Secretary

We refer to these executive officers as our "named executive officers" or "NEOs".

As used in this CD&A,

- "Total cash compensation" is referred to as the total of base salary and annual cash incentive compensation; and
- "Total direct compensation" is referred to as the total of base salary, annual cash incentive compensation and equity incentive compensation

The purpose of the CD&A is to explain the elements of compensation; why the Executive Compensation Committee (the "Compensation Committee") selects these elements; and how the Compensation Committee determines the relative size of each element of compensation.

Compensation decisions for Messrs. Schuller, Fox, Rhodes, and Luning were made by the Compensation Committee.

Compensation decisions for Mr. Franklin were made by the independent members of our Board of Directors based on the recommendation of the Compensation Committee.

Executive Summary

Introduction

Essential Utilities, Inc.'s mission is to improve quality of life and economic prosperity by safely and reliably delivering life's most essential resources. We are uniquely positioned to play an important role in solving today's water and natural gas infrastructure challenges by renewing and improving infrastructure through thoughtful capital investment, operational excellence, environmental stewardship and rigorous safety standards. Through the work of more than 3,000 employees across ten states, we help strengthen communities, improve service and enhance economic development, enabling people to live better lives. This vital work empowers us to grow as an organization and as individuals. We believe that, together, we will make a difference for generations to come.

Our executive compensation program is designed to promote this mission and strategy. Our compensation program does so by providing market-based pay and by rewarding the achievement of our strategic objectives. The principles and components of our compensation strategy are regularly reviewed by our Executive Compensation Committee, our Chief Executive Officer, and the Executive Compensation Committee's independent compensation consultant, Pay Governance, to ensure that they meet the objectives of the program, the Company, and its stakeholders.

Navigating Disruption

2020 began with the opportunity to build on the momentum of a strong 2019 performance. It ended in the turmoil of a global pandemic and economic crisis, and widespread civil unrest in the United States. Despite these unexpected and unprecedented events, Mr. Franklin and Essential's executive team led the Company to another year of strong financial performance, while successfully adapting to quickly changing circumstances and demonstrating the resilience needed to ensure our customers have access to their natural resources.

Responding to the pandemic involved both maintaining the reliability and safety of our own operations and accelerating our digital transformations. We took action early to enable remote work and adopt other measures to protect the health and well-being of our workforce and ensure the continuity of our operations. The safety of our front-line employees was and is paramount to ensure our customers reliably receive clean water and gas to their homes and businesses. This was particularly acute in 2020 and now, with the large number of the general workforce suddenly pivoting from working in offices to working in their homes. Through the pandemic, we prioritized the health and well-being of our employees.

Impact of Peoples Natural Gas Acquisition and Shareholder Feedback on Executive Compensation

In 2020, we introduced a revised compensation program design for our Essential executives based on an extensive study of industry best practices which was validated by a high say on pay performance rating of 96.2% at the 2020 Shareholders Meeting. In March 2020, the acquisition of Peoples Natural Gas closed which increased the Company's rate base by 45% and broadened the executive roles to encompass gas and water responsibilities. There were associated changes in the Executive pay levels to reflect their new roles.

The timing of the acquisition occurred simultaneously with the escalation of the COVID-19 situation across the United States. While the Utilities industry was not as severely affected as most public companies by the pandemic, we are proud to say that we did not make any pandemic-related changes to the executive compensation plan. In fact, we are raising the bar on our executives by including equity, diversity and inclusion measures in our short-term incentive plans moving forward as well as becoming an environmental leader with aggressive environmental standards. In February 2020, we announced that we will, over several years, install mitigation technology at water treatment facilities where source water exceeds 13 parts per trillion (ppt) for any Poly-fluoro alkyl substances (PFAS). This is well below the EPA's non-enforceable health advisory level of 70 ppt. These initiatives are reflected in our incentive plan goals. Pay Governance LLC (Pay Governance or the consultant), the independent compensation consultant retained by the Compensation Committee, provided advice and guidance throughout the compensation design process.

Executive Summary

Annually, the Committee incorporates investor feedback on the compensation program design into their review of the plans to ensure alignment with market expectations about our compensation and performance. The peer group adopted by the Committee for 2020 was unchanged. The performance measures for each element of the program were examined to ensure they aligned with the interests of our shareholders, customers, and employees as well as being competitive with the compensation practices of our industry peer group. The program design, types of compensation vehicles, and the relative proportion of the named executive officers' total direct compensation represented by these vehicles is consistent with current competitive compensation practices in the utility industry

The 2020 compensation program's performance measures align the interests of our stakeholders and our named executive officers by correlating the amount of the named executive officer's pay with the short-term and long-term performance of the Company and its stock price.

2020 Performance Highlights

While 2020 was an unprecedented year given the completion of the transformation acquisition of Peoples Gas and the COVID- 19 pandemic, we remained focused and continued to fulfill our mission to be the best possible provider of essential resources by serving the needs and expectations of our customers, shareholders, employees and the communities we serve. This multi-stakeholder approach is underpinned by a continued focus on growing our customer base through acquisitions, prudent investment of capital to renew our aging infrastructure, and the creation efficiencies across the organization. We continue to see great opportunities ahead and remain focused on investing in infrastructure and delivering sustainable growth for our investors.

- In 2020, **we invested approximately $900 million in infrastructure projects across the water and gas utilities**, helping to ensure safe and reliable service for all customers.
- **Revenues were $1.46 billion in 2020**, an increase of 64.4 percent over 2019. Adjusted (non-GAAP) revenues were $1.49 billion.*
- **Earnings per share were $1.12 in 2020**, including items from the Peoples transaction. Excluding these items, adjusted (non-GAAP) earnings per share were $1.58 compared to adjusted earnings per share of $1.47 in 2019.*
- **We added approximately 12,000 water and wastewater customer equivalents through acquisition in 2020** and increased water and wastewater customers served by 2 percent, which includes customers from organic growth and acquisitions. Our acquisitions in 2020 added approximately $62.9 million in rate base.
- **We continued the approval process for the DELCORA acquisition, a $276.5 million acquisition** of a wastewater authority which provides service to over half a million people. **DELCORA has the equivalent of 198,000 retail customers.**
- From January 1, 2018 to December 31, 2020, **the total return to our shareholders**, including share price appreciation and dividends paid, shows 29.08 percent growth.
- In August 2020, the Board of Directors approved a 7 **percent increase in the quarterly dividend** to an annualized rate of $1.0028 per share.
- We continued to enhance our ESG program with commitments to renewable power at our water utility and to PFAS treatment announced in February 2020. **In October 2020 we published what we believe to be an industry-leading, award-winning, and expanded ESG report** which you can find on our interactive ESG microsite ESG.Essential.co.
- In early 2021, we made a greenhouse gas emissions reduction commitment that the entire Company, **by 2035, will reduce Scope 1 and 2 emissions by 60% from our 2019 baseline**.
- **Additionally, we set commitments related to supplier diversity and employee diversity**. You can read more about these ESG initiatives on our ESG microsite at ESG.Essential.co.

* See Appendix B for a reconciliation of non-GAAP financial measures to GAAP financial measures.

2018-2020 Pay for Performance Alignment

Our pay programs are designed to reflect the Company's performance. The following table shows the relationship between financial performance goals and executive performance-based payouts over the past three years:

	Target EPS (adjusted for comp plan)	EPS (adjusted for comp plan)	STI Payout %	3 Year TSR Return	PSU Payout %
2018	$1.39	Achieved	136.34%	23.32%	70.68%
2019	$1.47	Achieved	126.45%	67.75%	159.91%
2020	$1.55	Achieved	137.10%	29.08%	175.00%

Our Pay for Performance Compensation Program

Our compensation program for named executive officers is designed to:

- Provide compensation that is competitive with our industry peers and appropriately correlates incentive compensation to the achievement of the Company's short- and long-term performance for customers and shareholders;
- Provide a total compensation package that is aligned with industry standards and enhances our ability to:
  - Motivate and reward our named executive officers for contributions to our financial success;
  - Attract and retain talented and experienced named executive officers; and
  - Ensure a significant portion of pay is performance based to better align pay with the successful achievement of our business objectives;
- Reward our named executive officers for leadership excellence and contribution to the organization's success; and
- Maintain an important focus on environmental, social, and governance issues while building shareholder value.

Highlights of our Compensation Policies

Pay for Performance and Results of the 2020 Advisory Vote to Approve Executive Compensation

Our goal is to instill a pay for performance culture throughout the Company. At our 2020 Annual Meeting, we submitted a proposal to our shareholders for a non-binding advisory vote on our 2019 compensation awarded to our named executive officers. Our shareholders approved the proposal at a 96.2% approval rate. This approval level validated the new compensation design structure which we believe will propel us into the future. No changes to the overall design of the plan are being made in 2021, although the short and long term programs' targets and performance measures are changing to reflect the larger Essential Utilities entity.

Aligning Interests of NEOs and Shareholders

Annually, we solicit the opinions of our top shareholders on several items, including our executive compensation program design. We do this to ensure that the pay balance and alignment is viewed as driving long-term high performance of our named executive officers and other members of management.

As a result of these meetings and conversations, and other analysis, the Compensation Committee has taken the following actions.

Compensation Committee Actions

- **Continued with a highly competitive peer group** based on Essential's post-acquisition revenue and market cap scope as well as business mix. Since the industry peer group was substantially modified in 2020, no changes will be made for 2021. For 2020, the number of peer group companies was reduced to 15 and encompass both the gas and water utilities industry to reflect the Peoples acquisition. The revised peer group provides a more representative comparison between Essential, the relative utility industry, and those companies used as comparators by institutional investors
- **Revised the individual performance portion of our short-term incentive plan to metrics focused on** diversity, equity, and inclusion metrics for 2021 as Essential seeks to strengthen its talent, enhance its workplace environment and support the supply chain. Essential is taking a leadership role relative to the utilities industry who focus mainly on environmental measures for their plans out of the ESG areas.
- **Maintained long-term incentives** to drive Company Value through performance share units and promote retention of key employees through RSUs. For 2021, our long-term incentive mix will continue to weigh heavier on PSUs at 65% and RSUs at 35%.
- **No COVID-19 compensation changes in 2020.** Our Compensation Committee did not make any adjustments to our compensation program in relation to COVID-19 (or for any other reason).
- **Talent acquisition and succession planning** were at the forefront of our human resources agenda for this year, which includes developing plans for key executive roles to ensure a strong internal talent pipeline for the future.

Section 1

Our Compensation Philosophy

Our compensation program for named executive officers is designed to:

- Provide compensation that is competitive with our industry peers and appropriately correlates incentive compensation to the achievement of the Company's short- and long-term performance for customers and shareholders;
- Provide a total compensation package that is aligned with industry standards and enhances our ability to:
  - Motivate and reward our named executive officers for contributions to our financial success;
  - Attract and retain talented and experienced named executive officers; and
  - Ensure a significant portion of pay is performance based to better align pay with the successful achievement of our business objectives;
- Reward our named executive officers for leadership excellence and contributions to the organization's success; and
- Maintain an important focus on environmental, social, and governance issues while building shareholder value.

Components of Compensation for Named Executive Officers

The following chart provides a brief summary of the principal elements of our executive compensation program for 2020. We describe these elements, as well as retirement, severance and other benefits, in more detail on pages 50 through 60.

	Compensation Element	Form	Compensation Objective	Relation to Objective
Fixed	**Base Salary**	Fixed annual cash paid bi-weekly	Compensate executives for their level of responsibility and sustained individual performance based on market data.	Merit salary increases are based on subjective performance evaluations as well as actual performance against defined objectives.
Variable **Performance- and/or Stock-Based Compensation**	**Annual Cash Incentive Awards**	Variable cash paid on an annual basis based on achievement of pre-established goals	Motivate executives to focus on achievement of our annual business objectives.	The amount of the annual incentive award, if any, is entirely dependent on achievement of pre-established Company and individual goals.
	Long-Term Equity Incentive Awards	Restricted Stock Units	Align executive interests with shareholder interests; retain key executives.	Provide equity that will have same value as shares owned by shareholders; subject to stock ownership guidelines.
		Performance Share Units	Aligns executive interests with shareholder interests; creates a strong financial incentive for achieving or exceeding long-term performance goals.	The named executive officers receive equity only if the pre-established goals are achieved.
		Restricted Stock*	Aligns executive interests with shareholder interests, retains key executives, rewards achievement of long-term goals.	The named executive officers receive a special one-time restricted stock grant upon achievement of specific goals.

* A special one-time grant was awarded to Messrs. Schuller, Fox, Rhodes, and Luning as part of the Peoples Natural Gas Closing.

Competitive Pay Positioning

We measure the competitiveness of our program for our named executive officers against the median compensation for comparable positions at other companies in our benchmark group composed of other investor owned utilities.

Our goal is to provide total direct compensation that is competitive with the market median for each named executive officer. Based on the information supplied by the consultant, the total target direct compensation for each of our named executive officers was within the competitive range of the benchmark market data for each of their positions during 2020.

Section 2

How We Determine Executive Compensation

We emphasize pay for performance, especially for our higher-level executives. Therefore, the named executive officers receive a substantial portion of their total direct compensation from annual cash incentives and long-term equity incentives, which are risk-based incentives based upon achieving company goals. In addition, the percentages of total direct compensation represented by base salary, annual cash incentive opportunities, and equity incentives, respectively, for the named executive officers are generally in line with competitive market median benchmark percentages.

The Role of the Compensation Committee

The Compensation Committee, composed entirely of independent directors, determines the actual amount of each element of annual compensation to award to the Company's named executive officers with the goal of having the target total direct compensation opportunity for each named executive officer generally within a range of 15% above or below the market median rate for his or her position over time.

The Role of Management

- **Our Senior Vice President, Chief Human Resources Officer** assists the Compensation Committee by preparing schedules showing the present compensation of executives, market median rates, target annual cash incentives and target range of equity compensation awards from the information provided by the Compensation Committee's consultant.
- **Our Chief Executive Officer** compiles and presents the supporting information for the individual executives' performance against their objectives and his recommendations for any discretionary compensation based on his evaluation of the extent of achievement of individual goals (the Individual Factor) under the Annual Plan. He also provides the Compensation Committee with his recommendations for annual salary increases, any changes in target annual cash incentive percentages and equity incentive awards for the other executive officers, but the ultimate decisions regarding compensation for the named executive officers is made by the Compensation Committee.
- **Our Chief Financial Officer** provides the Compensation Committee with certifications as to our financial performance for purposes of the Compensation Committee's determination of the achievement of the Company-specific goals (the Company Factor) for the Annual Plan, our performance against the criteria established by the Compensation Committee for the vesting of restricted share grants and the earning of performance shares. These financial measures are also certified by our Director of Internal Audit.

The Role of the Compensation Committee's Independent Consultant

The Compensation Committee retained Pay Governance, a nationally recognized compensation consulting firm, as the Compensation Committee's independent consultant to assist in designing and assessing the competitiveness of our executive compensation program. The Compensation Committee concluded that Pay Governance is an independent consultant after considering the factors relevant to Pay Governance's independence from management, and NYSE and SEC rules regarding compensation consultant independence.

Annually, the Compensation Committee has the consultant develop a market rate for base salary, total cash compensation, and total direct compensation for each of the named executive officer positions, including the allocation between cash compensation and equity incentives. Each market rate represents the median compensation level that would be paid to a hypothetical, seasoned performer in a position having similar responsibilities and scope, in an organization of similar size and type as the Company.

Our 2020 Benchmarking for Competitive Pay

In developing the market median for the named executive officers, the Compensation Committee's consultant, Pay Governance, used compensation data from our 15 utility peer group companies.

The combination of salary, short-term incentives, and long-term incentives is intended to compensate executives at approximately the 50th percentile of the market when the Company performs at target level.

Pay Governance reviews the Company's executive compensation program for the Compensation Committee and annually provides the data and analysis described above. The compensation consultant discusses the proposed actual compensation awards for the named executive officers and provides research and input to the Compensation Committee on changes to the compensation program.

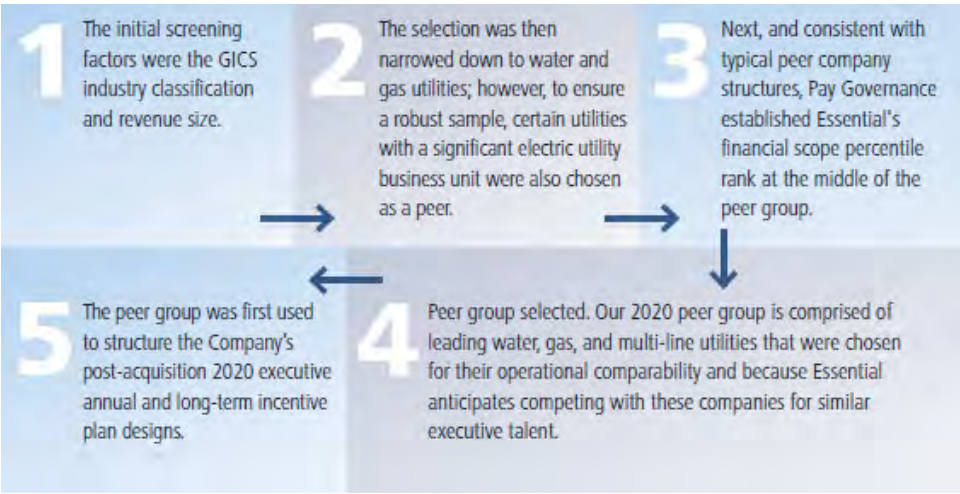
In 2020, Pay Governance also analyzed the Company's executive compensation program to ensure that it remained competitive. Pay Governance uses the median to show the market rate for base salary, total cash compensation and total direct compensation, including the allocation between cash compensation and equity incentives. Pay Governance provides no other services to the Company other than serving as the Compensation Committee's compensation consultant for executive and director compensation decisions.

Our 2020 Benchmarking Peer Group

A simplified fifteen company peer group is used to benchmark executive pay. This custom peer group was used in 2020 and will continue to be the foundation of our benchmarking approach.

How We Selected our Peer Group

A multi-step screening process was used to determine the final comparator companies.



Our peer group is set forth on Appendix A.

Shareholder Advisory Vote Impact on Compensation Committee Actions

The Compensation Committee also takes into consideration the results of the advisory votes on the Company's executive compensation program for the few years prior to the year for which the executive compensation decisions are being made. The Company is committed to providing shareholders with more transparency in metrics and measurements, which you will see as you review our 2020 incentive plan results.

Highlights of 2020 Compensation Plan Changes

During 2020, the Compensation Committee made the following key decisions for the compensation plan designs:

- Used the Company's select peer group of fifteen companies with revenues, market capitalization and industry focus comparable to Essential's expansion from water to a combined water and gas Company;
- Underscored the Company's commitment to gas safety and environmental protection by altering the 2020 short-term incentive program to incorporate specific measures focused on gas safety and gas environmentalism;
- Eliminated stock options and replaced them with performance stock units (PSUs) in the long-term incentive program to align with industry norms and the Company's strategic plan;
- Retained the Company's focus on retention of key employees, by continuing to issue restricted stock units (RSUs);
- Refined the 2020 Total Shareholder Return (TSR) portion of the PSUs from two measures to one TSR measure based on the new fifteen Company peer group; and
- Revised the balance between cash compensation and long-term incentives for Mr. Franklin to a heavier weighting on long-term incentives in the total compensation package to further underscore the drive for long-term value creation for shareholders.

Section 3

2020 Executive Compensation Program

Overview

Our executive compensation program is composed of the following seven elements, which we believe are important components of a well-designed, balanced and competitive compensation program. We use these elements to achieve our compensation program objectives as follows:

Element of Compensation	Objectives
Competitively benchmarked base salaries	Designed to attract and retain named executive officers consistent with their talent and experience; market-based salary increases are designed to recognize the executives' performance of their duties and responsibilities; and promotions and related salary increases are designed to encourage executives to assume increased job duties and responsibilities.
Short-term incentives or annual cash incentive awards	Intended to reward executives for: • improving the quality of service to our customers; • controlling the cost of service to our customers by managing expenses and improving performance; • achieving economies of scale by the acquisition of additional water and wastewater systems that can benefit from our resources and expertise; • disposing of under-performing systems where appropriate; and • enhancing our financial viability and performance by the achievement of annual objectives.
Long-term equity incentives	Designed to reward named executive officers for: • enhancing our financial health, which also benefits our customers; • improving our long-term performance through both revenue increases and cost control; and • achieving increases in the Company's equity and in absolute shareholder value and shareholder value relative to peer companies, as well as helping to retain executives due to the longer-term nature of these incentives.
Retirement benefits	Intended to assist named executive officers to provide income for their retirement.
Non-qualified deferred compensation plan	Designed to allow eligible executives to manage their financial and tax planning and defer current income until a later date, including following retirement or other separation from employment without an additional contribution from the Company.
Double-trigger Change-in-control agreements	Designed to promote stability and dedication to shareholder value in the event of a fundamental transaction affecting the ownership of the Company and to enable the named executive officers to evaluate such a transaction impartially.
Stock ownership guidelines	Designed to focus named executive officers on the long-term performance of the Company and align the interests of our executives with our shareholders by encouraging named executive officers to maintain a significant ownership interest in the Company.

Base Salary

Base salary is designed to provide the named executive officer and all our other employees, with a level of fixed pay that is commensurate with the employee's role and responsibility. We believe that by delivering base salaries that are reflective of market medians, we are positioned to attract and retain top caliber executives in an increasingly competitive labor market. In 2020, no turnover of the top executive team is indicative of our success in attracting and retaining the executives throughout a significant acquisition and growth process. The Compensation Committee annually reviews the base salaries of the named executive officers as well as all our senior executives, to evaluate whether they are competitive with our industry peers.

The Compensation Committee determines any base salary changes for the named executive officers based on a combination of factors including competitive peer market pay, level of responsibility, experience, and internal pay equity. Additionally, the Compensation Committee considers recommendations from our CEO, Mr. Franklin, reflecting his assessment of the individual's performance and their contributions to the achievement of business objectives. Mr. Franklin's pay is evaluated separately by the Compensation Committee with the final recommendation approved by all the independent members of the Board.

A competitive base salary is necessary to attract and retain a talented and experienced workforce. Actual salaries for the named executive officers, other than the Chief Executive Officer whose salary is determined by the Board of Directors using the same criteria, are determined by the Compensation Committee by considering both the market median rate for the position and internal equity with both the other named executive officers and other employees of the Company. The Compensation Committee's goal is to maintain base salaries generally in line with the market median rate over time for each of the named executive officers, although deviations from this goal may occur due to promotions.

Base salaries are considered for adjustment annually and adjustments are based on general movement in external salary levels, changes in the market rate for the named executive officers' positions, individual performance, internal equity and changes in individual duties and responsibilities.

NEO 2020 Base Salary

For 2020, the annual increases to the salaries for the named executive officers reflected these assessments and averaged 7.0% which reflected market salaries based on the addition of Peoples Natural Gas into Essential Utilities.

The base salaries approved by the Compensation Committee for 2020, effective March 16, 2020, were as follows: Mr. Franklin, $875,000; Mr. Fox, $432,853; Mr. Schuller, $445,512; Mr. Rhodes, $430,921; and Mr. Luning, $385,683.

Short-Term Incentive Awards

The 2020 Annual Cash Incentive Awards

The Annual Cash Incentive Award Plan is a non-equity incentive plan which provides each named executive officer with the opportunity to earn a cash award tied primarily to Company performance against business objectives with a small individual performance element.

A balanced scorecard approach to this cash incentive ensures that all employees work in the best interests of the shareholders, employees, and customers.

Metric/Weighting	**Metric Rationale and Definition** Target Performance Range: 50% - 150% of Target
50% Financial · Adjusted Earnings Per Share* 35% · Return on Equity 15%	Half of the total award funding is based on the financial performance of the overall Company with the majority (35%) based on Essential Earnings Per Share and 15% based on Return on Equity. This award measure aligns the executive to results for the shareholders.
20% Safety · Lost Time/Restricted Time Incidents · Responsible Vehicle Accident Rate · Peoples Gas Safety Rate	From the employee perspective, Essential has a strong commitment to safety with an additional 20% of the award based on the ability of the Company to manage OSHA defined lost time incidents and recordable incidents as well as responsible vehicle accident rates, defined as the number of responsible vehicle accident (RVA) during which the driver failed to do everything reasonable to avoid the accident per million miles driven. The determination of the preventability is based on criteria similar to that found in the National Safety Council's Guide to Determine Motor Vehicle Accident Preventability Report. Peoples Gas Safety measures compliance with key measures including inspections completed, e.g. regulating station inspections, critical valve inspections, corrosion test station reads, and leak surveys.
10% Environmental Stewardship · Water Compliance · Wastewater Compliance · Peoples Gas Leaks · Peoples Gas LTIIP	Environmental stewardship as measured by water and wastewater or gas compliance rates accounts for another 10% of the overall plan. Compliance is defined as a Water or Wastewater event causing the operating system to be out of compliance for at least 1 day out of the available days of the year (365 days in 2020). Reduction in gas leaks outstanding includes the number of leaks outstanding at year end as reported on DOT reports. The gas LTIIP mileage replacement is measured as percentage complete per the approved plan.
10% Customer Satisfaction · Service Level	The customer satisfaction metric (10%) ensures that we balance financial, safety and environmental concerns with our customer service levels. This metric measures the service level in terms of timeliness to answer calls within 30 seconds of receiving a customer call.
10% Individual Performance · Two individual goals set	Individual performance based on specific goals that align with broader Company goals represent 10% of the formula. At the beginning of 2020, two individual goals were identified for each named executive officer that aligned with the broader Company goals. Each named executive officer was rated on the achievement of each goal.

* Adjusted EPS is a non-GAAP financial measure. See Appendix B for reconciliation to the GAAP financial measure and adjustments made for purposes of the compensation metric attainment.

2020 Annual Cash Incentive Award Metrics and Targets

The tables and the narrative below detail the 2020 Annual Cash Incentive Award Metrics.

Metric Weight	Metric	Metric Components & Weights	Target Achievement 50%	100%	150%
50%	Financial	Essential Earnings Per Share* [35%]	$1.50	$1.55	$1.60
		Essential Return on Equity [15%]	5.77%	9.52%	13.27%
20%	Safety	Essential Lost Time/Restricted Time [5%]	2.5	2.0	1.6
		Essential Responsible Vehicle Accident Rate [5%]	3.9	3.3	2.7
		Peoples Gas Safety Rate [10%]	99.98%	99.99%	100.00%
10%	Environmental Stewardship	Aqua Water Compliance [2.5%]	99.20%	99.55%	99.90%
		Aqua Wastewater Compliance [2.5%]	92.50%	94.50%	96.50%
		Peoples Gas Leaks [2.5%]	905	860	814
		Peoples Gas LTIIP [2.5%]	90.00%	100.00%	110.00%
10%	Customer Satisfaction	Essential Service Level	80.00%	82.00%	84.00%
10%	Individual Goals				

* See Appendix B for a reconciliation of non-GAAP financial measures to GAAP financial measures.

2020 Performance

Based on the factors described above, the following table shows the 2020 performance of the Company compared to the targets set in the Annual Plan. The Compensation Committee evaluated the actual attainment of each performance goal, with particular emphasis on the above-target achievement of all goals and determined that the aggregate achievement of the corporate goals was 137.10%. Based on this determination, the table below shows the target annual cash incentive awards and the actual annual cash incentive awards, based on both corporate and individual goals, approved by the Compensation Committee for 2020 for the named executive officers.

2020 Company Performance Metric Scorecard

Metric	Metric Component	50% Threshold	100% Target	150% Maximum	Actuals	Total Attainment	Weight	Achievement
Financial	Essential Earnings Per Share	$1.50	$1.55	$1.60	$1.67	150.00%	35.0%	52.50%
	Essential Return on Equity	–3.75%	0.00%	3.75%	1.02%	113.60%	15.0%	17.04%
Safety	Essential Lost Time/Restricted Time	2.5	2	1.6	1.2	150.00%	5.0%	7.50%
	Essential Responsible Vehicle Accident Rate	3.9	3.3	2.7	2.5	150.00%	5.0%	7.50%
	Peoples Gas Safety	99.98%	99.99%	100.00%	100.00%	150.00%	10.0%	15.00%
Environmental Stewardship	Aqua Water Compliance	99.20%	99.55%	99.90%	99.63%	111.43%	2.5%	2.79%
	Aqua Wastewater Compliance	92.50%	94.50%	96.50%	95.31%	120.25%	2.5%	3.01%
	Peoples Gas Leaks	905	860	814	621	150.00%	2.5%	3.75%
	Peoples Gas LTIIP	90.00%	100.00%	110.00%	104.04%	120.20%	2.5%	3.01%
Customer Satisfaction	Essential Service Level	80.00%	82.00%	84.00%	87.73%	150.00%	10.0%	15.00%
Individual Goals	Individual Goals	90.00%	100.00%	110.00%	100%	100.00%	10.0%	10.00%
							Total Achievement	137.10%

Additionally, the named executive officers had the following individual goals and achieved the results listed in the table below:

2020 Individual Metric Objectives in Short Term Incentive

	Goals	Results
Christopher H. Franklin	Close the Peoples Natural Gas Transaction.	Closed Peoples transaction in March 2020, leading a successful integration during a pandemic, mobilizing the company to serve customers without service challenges and moved a third of the workforce to a virtual operation.
	Prepare the DELCORA transaction for closing.	Significantly progressed the acquisition closure to an expected close date in 2021.
Daniel J. Schuller	Raise equity and debt capital to term out the revolver, fund the DELCORA acquisition, and support the balance sheet.	Completed $1.1B public debt offering in April 2020 and completed a $308M forward sale of common equity in August 2020.
	Complete repair study and implement tax repair at Peoples.	Completed the repair study and elected tax repair via an IRS Form 3115 filing on March 31, 2020.
Richard S. Fox	Attain related legislative proposals including CAM, FMV, DSIC, SIC as well successful operational plans and rate cases in our states where these opportunities are targeted for achievement.	Successfully attained legislative proposals including CAM, FMV, DSIC, SIC as well successful operational plans and rate cases in our states such as Pennsylvania, Texas, and Ohio.
	Hire and ensure successful transition of President, Peoples.	Conducted a national search for an experienced gas leader, through multiple rounds of interviewing, and hired a strong leader. Led successful transition of Gas President despite the pandemic.
Matthew Rhodes	Advance closing processes for DELCORA and other pending acquisitions so they are efficiently moving through the regulatory and integration process. Continue signing over $60M of additional municipal acquisitions to further grow the Company.	Led the progress towards the closing of DELCORA. Signed agreements for 3 deals in 2020 (in Pennsylvania, Texas and Illinois) with approximately $90 million of purchase price.
	Conduct monthly senior level strategy sessions, culminating in a Q4 Strategy Review with the Board. Implement any board approved changes.	Led monthly meetings throughout the year to review a variety of growth and other strategic objectives culminating in a successful presentation to the Board in October, along with updated Growth Guidelines and Objectives for the Company. Initiated a broader strategic exercise for all senior leaders that will culminate in a Board review of strategic priorities.
Christopher P. Luning	Integrate Aqua/Peoples legal, risk, and insurance programs for a combined Essential Utilities platform.	Integrated the legal, risk, and insurance program to ensure consolidation of programs to deliver efficiencies while ensuring that Company's risks were appropriately managed.
	Execute Companywide PFAS legal strategy including protecting company's interests in court proceedings.	Implemented Companywide PFAS strategy. Identified top areas for potential recovery and initiated lawsuits in Pennsylvania against manufacturers and patent holders. Prepared lawsuits to be filed in North Carolina, New Jersey, Ohio, and Virginia.

2020 Named Executive Officer Short Term Incentive Award

Name	2020 Salary Rate* ($)	2020 Target Bonus %	2020 Company Metric Excluding Individual Metric	2020 Individual Metric	Total Factor	STI Payment ($)
Christopher H. Franklin	$875,000	100%	127.10%	14%	141.10%	$1,234,625
Daniel J. Schuller	$445,512	65%	127.10%	14%	141.10%	$ 408,601
Richard S. Fox	$432,853	65%	127.10%	14%	141.10%	$ 396,991
Matthew Rhodes	$430,921	60%	127.10%	14%	141.10%	$ 364,818
Christopher P. Luning	$385,683	60%	127.10%	14%	141.10%	$ 326,519

* The 2020 Salary Rate is an annualized rate

Long-Term Equity Incentive Awards

Our use of equity incentive awards is intended to reward our named executive officers for:

- Enhancing the Company's financial health, which also benefits our customers;
- Improving our long-term performance through both revenue increases and cost control; and
- Achieving increases in the Company's equity and shareholder value, as well as helping to retain these executives due to the longer-term nature of these awards.

We make these equity incentive awards under our Amended and Restated Omnibus Equity Compensation Plan (the Plan). Under the Plan, the Compensation Committee and the Board of Directors may grant stock options, dividend equivalents, performance- based or service-based stock units and stock awards, stock appreciation rights and other stock-based awards to officers, directors, key employees and key consultants of the Company and its subsidiaries who are in a position to contribute materially to the successful operation of our business.

Starting in 2011, the Compensation Committee began using a combination of performance share units and restricted stock units to better link the named executive officers' long-term incentive compensation to performance results that led to increased shareholder value and enhanced our long-term financial stability, which also benefits our customers. As noted, previously, however, the Compensation Committee did not make performance share units awards in 2019 due to the uncertainties associated with the pending Peoples Natural Gas acquisition. In 2020, the long-term incentive program returned to awarding a combination of performance share units and restricted stock units.

We aim to strike a balance between the incentive and retention goals of our equity grants:

- All of the equity grants to our Chief Executive Officer are subject to performance goals.
- For our other named executive officers, seventy percent of the equity grant is performance-based, and thirty percent is in the form of service-based restricted stock units.

Using the market median rates developed by Pay Governance, the Compensation Committee evaluates the annual equity incentive awards made to the named executive officers as part of the total compensation package designed to be competitive with the benchmarked group and our industry. The Compensation Committee does not consider any increase or decrease in the value of past equity incentive awards in making these annual decisions.

In considering the number of equity incentive awards to be granted in total to all employees each year, the Compensation Committee considers the number of equity incentive awards outstanding and the number of equity incentive awards to be awarded as a percentage of Essential's total shares outstanding.

The number of equity incentive awards granted annually to all employees has been less than 1% of Essential's total shares outstanding per year for the past several years. It is our equity granting policy to make all equity incentive awards on the same grant date.

Long Term Equity Incentive Awards Mix

Performance-based equity awards provide guidance and incentives to management for building shareholder growth, while restricted share units provide retention benefits while closely aligning management with the shareholders. The Compensation Committee is also focused on tying the awards to the appropriate metric. Below are charts describing the balance between the performance share units' metrics, performance-based options, and restricted stock units' payouts for 2018-2021:

Long-Term Equity Mix for 2018-2021

Award Year	Performance Period	Payment Year	Performance Share Units	Performance Based Stock Options	Restricted Stock Units
2018	**2018-2020**	**2021**	53%	13%	33%
2019	**2019-2021**	**2022**	N/A	70%	30%
2020	**2020-2022**	**2023**	65%	N/A	35%
2021	**2021-2023**	**2024**	65%	N/A	35%

As a result of the Compensation Committee's analysis, it established the target percentages of base salary for each named executive officer:

	2020 Target LTI (%)
Christopher H. Franklin	230
Daniel J. Schuller	130
Richard S. Fox	135
Matthew Rhodes	105
Christopher P. Luning	105

Vested Performance Share Awards and Status of Outstanding Performance Share Awards

Performance share or performance share unit grants (PSU) (together referred to as performance shares) provide the named executive officer with the opportunity to earn awards of shares based on Company performance against designated pre-determined, objective metrics. Participants are granted a target number of shares or units that can increase to 200% of the target or decrease to zero based on the Company's actual performance compared to the designated metrics. Dividends or dividend equivalents, as applicable, on the performance shares accrue and will be paid when the performance shares are earned and paid based on the number of shares actually earned, if any. Performance shares vest three years after the grant date.

Performance Goals for 2018 PSUs

The performance goals to be achieved under the PSU awards have been based on the following performance goals, with the weighting of each goal assessed each year.

Metric 1: Essential TSR vs Large Investor-owned Water Companies TSR

Our total shareholder return ordinal ranking at the end of the performance period as compared to the TSR of the other large investor-owned water companies (defined as Metric 1)

- American Water Works Company
- American States Water Company
- Connecticut Water Service, Inc.
- California Water Service Group
- Middlesex Water Company
- SJW Corporation

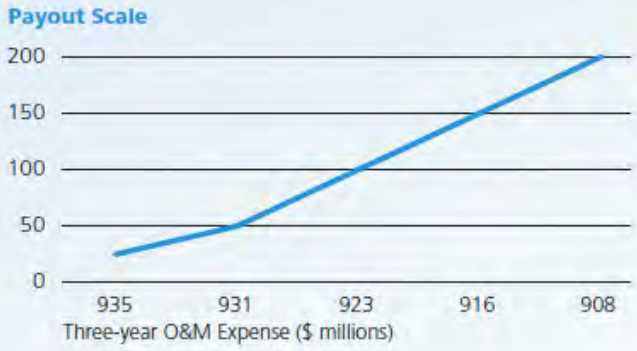
Metric 2: Essential TSR vs S&P Midcap Utility Index TSR

Our TSR ordinal ranking compared to the TSR for the companies in the S&P Midcap Utility Index (defined as "Metric 2")

- Allete Inc.
- PNM Resources Inc.
- Essential Utilities, Inc
- Atmos Energy Corp.
- Hawaiian Electric Industries, Inc.
- One Gas Inc.
- OGE Energy Corp.
- IDACORP Inc.
- Black Hills Corp.
- Northwestern Corp.
- New Jersey Resources Corp.
- Vectren Corp.
- MDU Resources Group Inc.
- Southwest Gas Holdings Inc.
- National Fuel Gas Co.
- UGI Corp.

Metric 3: Operating and Maintenance Expense

The achievement of maintaining Operating and Maintenance ("O&M") expenses within the Company's regulated operations over the performance period (defined as "Metric 3")



Metric 4: Rate Base Growth

The achievement of targeted cumulative level of rate base growth as a result of acquisitions.

2018-2020 PSU Awards Achievement

The three-year performance period for the PSU awards made by the Compensation Committee in 2018 ended on December 31, 2020. In February 2020, the Compensation Committee determined the achievement of performance goals for the 2018 PSUs.

As a result, the Compensation Committee certified that a 175.00% payout of the 2018 PSU awards was earned in accordance with the following results and weightings:

2018 PSU Metrics	Payout	Weight	Product
Metric 1: TSR Large Investor Owned Water Utilities	100.00%	25.0%	25.00%
Metric 2: TSR S&P Mid-Cap Utilities index	200.00%	25.0%	50.00%
Metric 3: 3 Year O&M Management	200.00%	25.0%	50.00%
Metric 4: 3 Year Rate Base Growth	200.00%	25.0%	50.00%
Total			**175.00%**

Applying this performance, the table at right shows the Target PSU award and the Actual PSU award approved by the Compensation Committee for the NEOs.

	Target PSUs Awarded in 2018	Actual 2018 PSUs Paid Out in 2020
Christopher H. Franklin	19,030	33,302
Daniel J. Schuller	4,750	8,312
Richard S. Fox	4,869	8,520
Matthew Rhodes (hire June 2018)	4,583	8,020
Christopher P. Luning	3,929	6,875

As seen by the charts above, the Compensation Committee believes that its long-term incentive compensation program aligns with the shareholders, combining total shareholder return with objective metrics aimed at increasing shareholder value, with the actual payout based on actual achievement of four metrics that the Compensation Committee believes address share-based and operational metrics that are important to shareholders.

Outstanding PSU Awards

The PSU awards granted in 2020 were redesigned to incorporate the change to one total shareholder return metric from the previous use of a water and mid-cap utility metrics. The performance period began on January 1, 2020 and will end on December 31, 2022 for the 2020 grant. The performance period for the PSU awards for 2021 began on January 1, 2021 and will end on December 31, 2023.

Please see the disclosure under the heading Outstanding Equity Awards at Fiscal Year-End for a description of the status of the 2020 PSU awards.

Restricted Stock

For 2020, in recognition of the closing of the Peoples Natural Gas acquisition, a special one-time grant of 2,988 shares of restricted stock (approximately $100,000) was awarded to Messrs. Schuller, Fox, Rhodes, and Luning.

Adjusted Return on Equity Calculation

The Company's adjusted return on equity is calculated annually in accordance with the descriptive formula below and if the adjusted return on equity meets or exceeds 150 basis points below the return of equity of the most current Pennsylvania PUC rate award, the awards will vest:

$$\text{Return on Equity} = \frac{\text{Net Income (excluding net income or loss from acquisitions which have not yet been incorporated into a rate application as of the last year end)}}{\text{Equity (excluding equity applicable to acquisitions which are not yet incorporated in a rate application during the award period) all as adjusted in accordance with the Omnibus Equity Compensation Plan}}$$

Beginning in 2020, under the redesigned long-term incentive program, stock options have been removed from the program and instead a heavier emphasis is placed on performance share units and restricted share units. This approach has become the foundation of the long term incentive program and will continue in 2021.

Restricted Share Awards

Annual restricted share or restricted stock unit grants (together referred to as restricted shares) entitle the named executive officer to receive the number of shares granted at the end of a given period of time, or in increments over a period of years on the anniversaries of the grant date, provided the named executive officer remains an employee of the Company. However, if separation is due to death, disability, retirement or termination following a Change in Control, then acceleration of the lapse of forfeiture restrictions occurs as set forth in the Plan.

- Dividends or dividend equivalents, as applicable, are accumulated and paid when the restricted shares are paid.
- The restricted shares to the other named executive officers (other than the Chief Executive Officer) vest 100% after three years, with vesting subject solely to continued service with the Company.
- The restricted shares to the Chief Executive Officer vest 100% after three years, with vesting subject to continued service with the Company and the Company's achievement of at least an adjusted return on equity equal to 150 basis points below return on equity granted by the Pennsylvania Public Utility Commission during the Company's Pennsylvania water subsidiary's last rate proceeding, subjected to adjustments as allowed under the Plan.
- The return on equity will be calculated in the same manner as it is calculated for the purpose of determining the return on equity required for the vesting of stock options.

Other Benefits

Retirement Plans

Our retirement plans are intended to provide competitive retirement benefits to help attract and retain employees. Some of our named executive officers are participants in our qualified pension plan (benefits frozen as of December 31, 2014) (the Retirement Plan), and in our non-qualified pension benefit plan (the Non-Qualified Pension Benefit Plan). Our non-qualified retirement plan is intended to provide executive officers with a retirement benefit that is comparable on a percentage of salary basis to that of our other employees participating in the Retirement Plan by providing the benefits that are limited under current Internal Revenue Service regulations. Benefits continue to accrue for some of our named executive officers in the Non-Qualified Pension Benefit Plan. Starting in 2009, the Company began to fund the trust for the benefits under the Non-Qualified Pension Benefit Plan using trust- owned life insurance. A named executive officer's retirement benefits under our qualified and non-qualified retirement plan are not taken into account in determining the executive's current compensation.

- Effective December 31, 2014, the named executive officers ceased accruing a benefit under the Retirement Plan and their plan compensation and credited service for purposes of determining their benefits was frozen.
- Vesting service will continue to accrue in the Retirement Plan as long as the named executive officer remains employed by the Company.

Non-Qualified Deferred Compensation Plan

We maintain a non-qualified Executive Deferred Compensation Plan (the Executive Deferral Plan) that allows eligible members of management to defer all or a portion of their salary and annual cash incentives, which enables participants to save for retirement and other life events in a tax-effective manner. Deferred amounts are deemed invested in one or more mutual funds selected by the participant under trust-owned life insurance policies on the lives of eligible executives.

To provide named executive officers with the full Company matching contribution available to other employees under our qualified plans, executives who choose to defer up to six percent of their salary under one of the Company's 401(k) plans, but do not receive the full Company matching contribution under such qualified plans due to the Internal Revenue Service regulations limiting the total dollar amount that can be deferred under a 401(k) plan ($18,000 for 2016, $18,500 for 2017 and 2018, $19,000 for 2019, and $19,500 for 2020), receive the portion of the Company matching contribution that would otherwise be forfeited by the executive as the Company's contribution into the Executive Deferral Plan.

- Effective January 1, 2009, the Company began to fund the trust holding amounts deferred by the participants in the Executive Deferral Plan using trust-owned life insurance.
- A named executive officer's deferrals and any earnings on deferrals under our non-qualified deferred compensation plan are not taken into account in determining the named executive officer's compensation.

Severance Plans

All of the named executive officers are covered by a severance policy. The policy provides the named executive officers with a severance benefit of one full year salary and one full year projected bonus and a minimum of one month of continued medical benefits and a maximum of six months of continued medical benefits following termination, provided that the named executive officer is terminated for any reason other than for cause.

Additionally, on July 1, 2018, Mr. Franklin and the Company entered into an Employment Agreement (Mr. Franklin's Employment Agreement). Under Mr. Franklin's Employment Agreement, if the Company terminates Mr. Franklin's employment without cause or does not renew the term of the Employment Agreement, or if Mr. Franklin terminates his employment for good reason (as defined in the agreement), Mr. Franklin will receive any accrued but unpaid salary and accrued vacation as well as a lump sum equal to (i) 24 months of base salary and (ii) two times the target annual bonus.

If the Company terminates Mr. Franklin's employment for cause or if he terminates his employment without good reason, or for death or disability, Mr. Franklin (or his estate) will receive any accrued but unpaid salary and accrued vacation. Mr. Franklin's Employment Agreement expires July 1, 2021 and may be extended for successive one-year terms upon mutual agreement of the Company and Mr. Franklin. Mr. Franklin's Employment Agreement is filed with our SEC filings.

Double Trigger Change-In-Control Agreements

We maintain change-in-control agreements with the named executive officers. These change-in-control agreements are intended to:

- minimize the distraction and uncertainty that could affect key management in the event we become involved in a transaction that could result in a change in control of the Company;
- enable the executives to impartially evaluate such a transaction;
- provide a retention incentive to our named executive officers; and
- encourage their attention and dedication to their duties and responsibilities in the event of a possible change-in-control.

Under the terms of these agreements, the covered named executive officer is entitled to certain severance payments and a payment in lieu of the continuation of benefits if his employment is terminated other than for cause, or in the event the executive resigns for good reason, as defined in the agreements, within two years following a change-in-control of Essential. *See the description of Potential Payments Upon Termination or Change-in-Control on pages 80 through 84.*

These change-in-control agreements are referred to as double trigger agreements because they only provide a benefit to executives whose employment is terminated, or who have good reason to resign, following a change-in-control. These change-in-control agreements do not provide any payments or benefits to the covered executives merely as a result of a change-in-control. The normal annual restricted share, stock option and performance share grants to the named executive officers also contain double trigger provisions. Each of the change-in-control agreements limits the amount of the payments under the agreements to the Internal Revenue Service's limitation on the deductibility of these payments under Section 280G of the Internal Revenue Code (the Code).

The Company has determined that there will be no tax gross-ups in any change-in-control agreements with executives and that all such agreements will be subject to the limitations under Section 280G of the Code. We believe that the multiples of compensation and other benefits provided under the change-in-control agreements, as described on pages 80 through 84 are consistent with the multiples in the market. Named executive officers who receive payments under their change-in-control agreements in connection with their separation from employment following a change-in-control will not be entitled to any payments under our normal severance policy.

Section 4

2020 NEO Compensation and Performance Summaries

Linking Pay and Performance

Here we provide a summary of each of our NEOs 2020 total direct compensation and an overview of their individual performance accomplishments relative to achieving our Company's annual and long-term performance goals.

Christopher H. Franklin

Chairman, President and Chief Executive Officer

Responsibilities

Mr. Franklin leads and guides the Company's strategic direction which primarily focuses on the high-quality delivery of water, wastewater and natural gas service in a manner that delivers value for shareholders. He sets the tone for the Company's culture based on a set of corporate values and objectives which incorporate strong environmental, social and governance practices.

Mr. Franklin leads the Company's work with legislators, regulators, customers, and communities to create solutions that support economic development and strong communities while preserving and protecting natural resources.

2020 Total Compensation Pay Mix

2020 Key Accomplishments

- Continued to grow the company with five new municipal acquisitions adding $62.9 million in rate base.
- Set the course for 2021 with approximately $365.6 million in pending acquisitions, with over 215,000 equivalent dwelling units.
- Invested nearly $900 million in infrastructure improvements across our footprint.
- Led the integration of Aqua and Peoples Natural Gas, with over 3,000 employees coming together as Essential Utilities.
- With a focus on the community, through the Essential Foundation, ensured over $4 million in community giving, including supporting organizations impacted by the Covid-19 pandemic.
- Established Essential's commitment to substantially reduce Scope 1 and 2 greenhouse gas emissions, which by 2035, targets a 60% reduction over Essential's 2019 emission levels, which is consistent with the rate of reduction necessary over the next 15 years to keep on track with the Paris Agreement.
- Started a three year technology transformation projection, investing in upgraded systems for our customers and operations to ensure improved customer experience and operational efficiency.
- Led efforts in Essential's path for diversity, equity and inclusion with multiple diverse leadership hires in 2020 to ensure Essential continues on its goal to have a diverse workforce reflective of the community we serve. Essential's efforts to diversify our Board and leadership teams has resulted in recognition in 2020 by Women on Boards and the Forum of Executive Women's Advancing Women Company Award.

Daniel J. Schuller

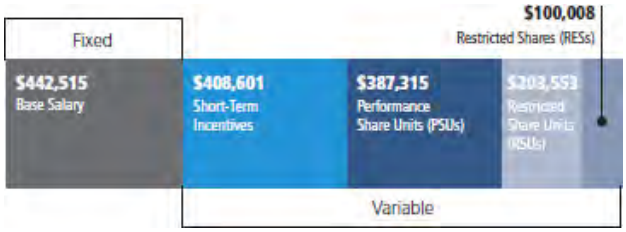
Executive Vice President and Chief Financial Officer

Responsibilities

As CFO, Mr. Schuller is responsible for managing Essential's overall financial condition, including resource and capital allocation, and expense discipline.

He is also responsible for overseeing all corporate finance functions, including financial planning, forecasting, cash flow planning, investment strategies, capital structure, regulatory and rate strategies.

2020 Total Compensation Pay Mix



2020 Key Accomplishments

- Played instrumental role in completing the March 16, 2020 Peoples closing, including securing $331 million in terms loans, expanding the revolving credit facility from $550 million to $1 billion, and closing the $750 million in PIPE financing. Subsequently repaid these term loans.
- Secured $500 million term loan to ensure adequate liquidity as COVID-19 broke. Subsequently repaid this term loan.
- Completed $1.1 billion public debt offering in April and completed a $308 million forward sale of common equity in August.
- Completed the repair study for Peoples Natural Gas and elected tax repair accounting treatment.
- Completed the integration of the Finance and Internal Audit organizations of Essential and Peoples.
- Ensured Finance and Internal Audit's full engagement in the Service Improvement Project.

Richard S. Fox

Executive Vice President and Chief Operating Officer

Responsibilities

As COO, Mr. Fox is responsible for responsible for the leadership, management and vision to ensure that the company has the proper operational controls, administrative and reporting procedures, and people systems in place to operate effectively and efficiently, grow the business, and ensure financial strength of the company.

Mr. Fox directs the company's focus on the key operational metrics and performance indicators across all our states.

2020 Total Compensation Pay Mix

2020 Key Accomplishments

- Attained best-ever annual OSHA defined employee and vehicle accident safety results in both the Aqua and Peoples operating units.
- Leader in company response to COVID-19 pandemic to provide safe working conditions for employees while still providing essential water and gas services and infrastructure projects.
- Delivered annual capital investment of approximately $900 million on gas and water infrastructure projects to ensure safe and reliable service for customers.
- Maintained excellent water and wastewater environmental compliance metrics at Aqua and improved emergency response time, unaccounted for gas, and pipe leaks at Peoples.
- Integrated the Peoples and Aqua operating teams to ensure culture, inclusion, and combined vision maintained even during COVID-19 pandemic.
- Filed revised Long Term Infrastructure Improvement Plan (LTIIP) for Peoples to support increased replacement rate of at-risk pipe segments in accordance with the company-proposed acquisition settlement provision.
- Initiated pipe replacement project in Goodwin-Tombaugh gathering system consistent with Pennsylvania PUC settlement order to ensure continuous service to thousands of natural gas customers.
- Completed successful rate case in Aqua North Carolina and Aqua New Jersey wastewater and filed a rate case in Aqua Virginia.
- Passed Fair Market Valuation legislation in Virginia and established new or revised rules for capital investment infrastructure surcharges in Texas, Virginia, and New Jersey.

Matthew Rhodes

Executive Vice President Strategy & Corporate Development

Responsibilities

As EVP of Strategy and Corporate Development, Mr. Rhodes is responsible for driving Essential's overall strategy and corporate development function, as well as leading the state presidents and business development leads in M&A initiatives. Mr. Rhodes is also responsible for leading the Company's Market-based businesses.

Mr. Rhodes guides a team of internal and external professionals responsible for due diligence, underwriting/ valuation, financing, ratings, negotiations, and transaction management, in partnership with other members of the executive team.

2020 Total Compensation Pay Mix

2020 Key Accomplishments

- Led efforts that significantly progressed the closing process for the DELCORA acquisition.
- Closed six water and wastewater acquisitions in four states that added approximately 12,200 customers and nearly $63 million of rate base.
- Signed three asset purchase agreements for approximately $90 million of water and wastewater acquisitions that will add 18,400 customers.
- Led a portfolio review and optimization analysis for Aqua's and Peoples' market-based businesses.
- Completed the sale of our unregulated pipeline joint venture.
- Led internal process to define the future growth strategy of the Company, along with a game plan for each state and functional area.
- Actively monitored the landscape of public and private investor owned water and wastewater utilities and analyzed potential opportunities.

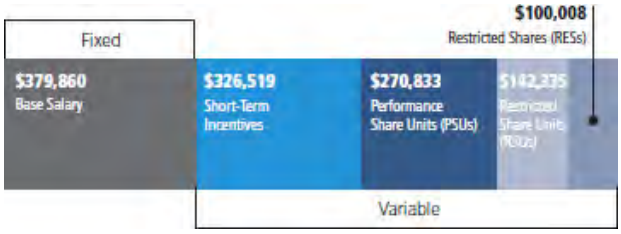
Christopher P. Luning

Executive Vice President, General Counsel and Secretary

Responsibilities

Mr. Luning is responsible for acting as a legal and business advisor to the Board of Directors, the CEO, and the senior leadership team. In addition, this position is responsible for the Corporation's Legal, Internal Audit, and Records Department, is the Company's designated SEC Compliance Officer, and is responsible for the Corporation's risk management including its Enterprise Risk Management program and its Insurance policies and programs.

2020 Total Compensation Pay Mix



2020 Key Accomplishments

- Integrated Aqua/Peoples legal, risk, and insurance programs.
- Executed companywide PFAS strategy including protecting Company's interests in court proceedings.
- Led the Peoples closing, including securing $331 million in term loans and closing the $750 million in PIPE financing.
- Led the Company's legal efforts to progress the closing of the Company's DELCORA Acquisition.
- Led legal team in the $1.1 billion public debt offering and the $308 million forward sale of common equity.
- Led the legal defense of the Company's large litigation matters.

Section 5

Our 2021 Short- and Long-Term Incentive Program

2021 Short-Term Incentive Program

New Diversity and Environmental Stewardship Metrics

For 2021, we are adding a new diversity metric (10% weighting) to our short-term incentive plan. The goal is to tie our diversity targets directly to executive compensation, encouraging our NEOs to recognize and build diversity in our operations. Besides our financial performance measures, the plan includes metrics around water and wastewater compliance, gas leaks and infrastructure improvement, customer satisfaction, and employee safety. We believe this incentive program builds on and supports an already strong foundation of management oversight of ESG.

The goal is to encourage our executive to focus on core issues associated with driving long-term shareholder growth and to recognize and build diversity in our operations.

We are proud of the progress we have made in diversity, but we believe we can improve. As a Company, we have set goals to make a difference and are sharing our data openly to hold ourselves accountable, but we are also working with our customers and partners in the industry to move faster together to diversity, inclusion and equity.

Essential believes that supplier diversity is critical for our communities as well as for our business. We want to source from and partner with businesses owned by individuals representative of the diverse communities and neighborhoods where we live, work, and operate each day. This also enriches and strengthens local economies, increases sourcing options, and fosters collaboration and innovation. We have a multiyear plan of increasing the proportion of controllable spend with diverse suppliers from 8.6% today across the company to 15%.

Proposed 2021 Essential Short-Term Incentive Plan

The utilities industry has lagged other sectors in attracting and retaining employees of color. Essential sees great opportunity to strengthen our diversity, equity, and inclusion program. The goal we are setting is based on local labor demographic data to ensure that our employee diversity reflects the communities that we serve. We have a range of diverse recruitment tactics and we believe tying compensation to this is the right decision to accelerate change. We also want to ensure employees of color experience equity and inclusion at Essential. This is why in recent years we have introduced unconscious bias training workshops and employee resource groups, and plan to adopt further supporting practices to achieve our multi-year target of 17% employees of color.

Besides financial measures and this new 10% weighting on diversity, our short-term incentive plan includes metrics around water and wastewater compliance, gas leaks and infrastructure improvement, customer satisfaction, and employee safety. We believe this incentive program builds on and supports an already strong foundation of management oversight of ESG.

The goal is to properly incent management to focus on core issues associated with driving long-term shareholder growth and to recognize and build diversity in our operations.

Below is the 2021 STI Plan that the Compensation Committee adopted for all named executive officers:

2021 Essential Short-Term Incentive Plan – Metrics, Weighting and Target Payout Levels

Each metric associated with the 2021 STI plan was carefully considered and appropriately weighted. The chart below illustrates each metric and shows the targets that are to be met to achieve certain payouts:

			2021 Target Payout Levels		
Metric	Metric Component	Weight	Threshold	Target	Maximum
Financial (50%)	Essential Earning Per Share	35.00%	$1.61	$1.66	$1.71
	Essential ROE	15.00%	4.52%	9.52%	14.52%
Safety (20%)	Essential Lost Time/Restricted Time	5.00%	2.0	1.65	1.0
	Essential Responsible Vehicle Accident Rate	5.00%	3.2	2.7	2.2
	Peoples Gas Safety	10.00%	99.98%	99.99%	100.00%
Customer Satisfaction (10%)	Essential Service Level	10.00%	80%/30sec	82%/30sec	84%/30sec
Environmental Stewardship (10%)	Aqua Water Compliance	2.50%	99.30%	99.70%	100.00%
	Aqua Wastewater Compliance	2.50%	93.00%	95.50%	98.00%
	Peoples Gas Leaks	2.50%	800	700	600
	Peoples Gas LTIIP	2.50%	97.50%	100.00%	102.50%
Diversity (10%)	Supplier Diversity	5.00%	11.20%	14.00%	16.80%
	Employee Diversity	5.00%	14.20%	14.50%	14.80%
		100.00%			

2021 Long-Term Incentive Program

As shown in the charts below, the program for 2021 will be comprised of 65% performance-based incentives and 35% restricted stock units.

2021 Essential Long-Term Incentive Plan

2021 Financial Metrics for PSUs

Relative TSR	The most prevalent long-term incentive metric in the peer group. The performance is based on relative TSR rank against our new 15 company peer group, with the percentile ranking determining the overall payout level (0 - 200%). The payout schedule would be: • Maximum (200% payout): 90th percentile (or greater) • Target (100% payout): 50th percentile • Threshold (50% payout): 30th percentile

Additionally, two other internal operating measures were chosen to balance internal financial and operational management with external shareholder results.

Rate base growth	Defined as the approved rate base at the time of acquisition plus subsequent capital invested in the following three years. Rate base growth is central to the Company's growth platform.
Operations and maintenance performance	To ensure cost effective operations, operations and maintenance targets include the budget plus the first two years in the plan for the regulated businesses only.

The charts below illustrate both of the components and metrics that the Compensation Committee will use to measure the performance of the Company with respect to the award of the shares associated with the PSUs:

2021 PSU Performance Target Payout Percentage

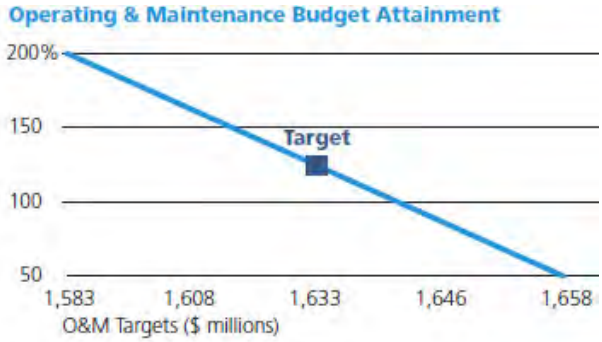
The charts below illustrate the performance that will be required for the 2021 PSUs to be paid out, and at what percentage:

LTI Metrics – Rate Base Growth and O&M

These charts illustrate both the Rate Base Growth and the Operations and Maintenance metrics that will be used by the Compensation Committee.

LTI Targets – Essential Rate Base Growth & O&M

Rate Base Growth: Rate base acquired through transactions: approved rate base at time of acquisition + subsequent capital invested in the following three years.



O&M Budget + First 2 years in the plan for the regulated businesses only.

Section 6

Compensation Governance Policies and Practices

Anti-Hedging and Anti-Pledging Policy

We believe that issuance of incentive and compensatory equity awards to our directors and named executive officers along with our stock ownership guidelines help to align the interests of such officers with our shareholders. As part of our insider trading policy, we prohibit all directors and employees from engaging in hedging or pledging activities with respect to any owned shares or outstanding equity awards. The policy specifically prohibits all insiders from engaging in any short sales of the Company's securities, buying or selling puts, calls or other derivative securities, or pledging the Company's securities as collateral for a loan. None of our directors nor any of our named executive officers engaged in any hedging or pledging activities with respect to the Company stock during 2020.

Clawback of Incentive Compensation

In the event of a significant restatement of our financial results caused by executive fraud or willful misconduct, the Compensation Committee reserves the right to review the cash incentive compensation received by the named executive officers with respect to the period to which the restatement relates, recalculate Essential's results for the period to which the restatement relates and seek reimbursement of that portion of the cash incentive compensation that was based on the misstated financial results from the executive or executives whose fraud or willful misconduct was the cause of the restatement.

In addition, starting with the performance share unit grants and restricted stock unit grants in 2014, all shares issued pursuant to those grants are subject to any applicable recoupment or clawback policies and other policies implemented by the Board, as in effect from time to time.

Limited Perquisites

We offer a limited number of perquisites for our named executive officers. The Board has authorized executive benefits consisting of executive financial planning and annual executive physical exams. The Board regularly reviews the benefits provided to our executives and makes appropriate modifications based on the value of these benefits.

Stock Ownership Guidelines

In 2005, the Board of Directors established stock ownership guidelines for the named executive officers to encourage these executives to maintain a significant ownership interest in the Company and to help align the interests of these executive officers with the long-term performance of the Company. In 2017, these guidelines were modified to recognize the different levels of executives who may be among the named executive officers and to state the guidelines in terms of the number of shares to be held rather than a dollar value, in order to avoid fluctuations in the number of shares to be held based on variations in the Company's stock price. In establishing the number of shares to be held, the Compensation Committee uses a round number of shares, the value of which approximates the following multiples of the midpoint of the average base salary grade for the executives:

Position	Multiple of Midpoint of 2020 Average Base Salary	Approximate Shares, PSUs, and RSUs To Be Held Based upon December 31, 2020 Share Price
Chief Executive Officer	5	92,500
Executive Vice President	3	26,900

Each named executive officer is expected to have shareholdings consistent with these guidelines within five years after becoming a named executive officer or after receiving a significant promotion. Messrs. Franklin and Fox each received a significant promotion in 2015 and Mr. Schuller was initially hired in 2015 and Mr. Rhodes was initially hired in 2018, starting a new five-year period for each.

Shareholdings, as defined for ownership requirement purposes, include shares held directly or beneficially, including shares acquired under our Employee Stock Purchase Plan or 401(k) plans and restricted shares units and performance share units.

An executive who has not achieved the guideline within this five-year period is expected to retain one-half of any equity awards, after any required tax withholding, in Company stock and to use 10% of any annual cash incentive awards after tax to purchase shares of Company stock until the guideline is met. The chart below shows the shareholdings of the named executive officers as of December 31, 2020:

Officer Shareholdings as of December 31, 2020

Name	Position	Shares, PSUs(1), and RSUs Held
Franklin	Chief Executive Officer	188,075
Schuller	Executive Vice President	46,582
Fox	Executive Vice President	38,973
Rhodes	Executive Vice President	25,641
Luning	Executive Vice President	55,423

(1) PSUs listed at target amount.

Executive Compensation Committee Report

The purpose of the Compensation Committee is to assist the Board of Directors in its general oversight of the Company's compensation programs and the compensation of the Company's executives. The Compensation Committee Charter describes in greater detail the full responsibilities of the committee and is available on our website: www.essential.co.

The Executive Compensation Committee has reviewed and discussed the Compensation Discussion and Analysis on pages 41 through 69 with management. Based on this review and discussion, the Executive Compensation Committee recommended to the Company's Board of Directors, and the Board of Directors approved, the inclusion of the Compensation Discussion and Analysis in the Company's Proxy Statement for the 2021 Annual Meeting of Shareholders.

Respectfully submitted,

Members:

Daniel J. Hilferty, *Chairperson*
Elizabeth B. Amato
Ellen T. Ruff
Lee C. Stewart

Executive Compensation Tables

The following Summary Compensation Table shows compensation paid to or earned by the named executive officers for 2020.

Summary Compensation Table

Principal Position	Year	Salary ($)(1)	Bonus ($)	Stock Awards ($)(2)	Option Awards ($)(2)	Non-Equity Incentive Plan Compensation ($)(1)(3)	Change in Pension Value and Non-qualified Deferred Compensation Earnings ($)(4)	All Other Compensation ($)(5)	Total ($)(6)
Christopher H. Franklin	2020	858,846	—	2,053,175	—	1,234,625	3,008,515	18,198	7,173,359
President and Chief	2019	792,909	—	448,884	997,962	945,110	2,610,971	15,190	5,811,026
Executive Officer	2018	749,321	—	1,158,719	178,220	913,122	535,338	17,957	3,552,677
Daniel J. Schuller	2020	442,515	—	690,876	—	408,601	—	23,689	1,565,681
EVP and Chief Financial Officer	2019	429,134	—	130,355	289,842	341,133	—	31,451	1,221,915
Principal Financial Officer	2018	392,384	—	289,223	44,487	326,439	—	150,121	1,202,654
Richard S. Fox	2020	425,454	—	695,083	—	396,991	821,694	15,901	2,355,123
EVP and Chief Operating Officer	2019	394,682	—	132,893	295,433	329,420	732,586	22,747	1,907,761
	2018	373,257	—	296,461	45,594	311,572	217,073	22,794	1,266,751
Matthew R. Rhodes	2020	424,415	—	561,603	—	364,818	—	19,780	1,370,616
EVP, Strategy &	2019	399,572	—	103,168	229,394	288,949	—	17,471	1,038,554
Corporate Development	2018	203,019	65,000	636,372	36,885	301,801	—	76,605	1,319,682
Christopher P. Luning	2020	379,860	—	513,176	—	326,519	553,681	17,061	1,790,297
SVP, General Counsel	2019	355,830	—	92,365	205,312	256,632	454,709	17,724	1,382,572
and Secretary	2018	339,732	—	239,251	36,797	216,796	31,811	14,562	878,949

(1) Salary and Non-Equity Incentive Plan Compensation amounts include amounts deferred by the named executive officer pursuant to the Executive Deferral Plan described beginning on page 78.

(2) **The grant date fair value of stock-based compensation** is based on the fair market value on the date of grant as determined In accordance with the FASB ASC Topic 718 accounting guidance for stock compensation. The assumptions used in calculating the fair market value are set forth in Note 14, Employee Stock and Incentive Plan contained In the Notes to the Consolidated Financial Statements In the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020. For performance shares, the RSUs, and Restricted Stock, the Grant Date Fair Value of Stock and Options Awards shown is based on the target number of the shares underlying the awards granted.

(3) **Non-Equity Incentive Plan Compensation** is shown for the year in which the compensation is earned and is generally paid in the following calendar year. See the description of these annual cash Incentive awards above under the CD&A section of this proxy statement.

(4) **Change in Non-qualified Pension Value and Deferred Compensation Earnings.** The increase from 2018 to 2019 was primarily due to the significant decrease in the discount rate from 4.30% at December 31, 2018 to 3.35% at December 31, 2019, plus the increase in benefit accrual for each participant. The change in pension value is based on the aggregate change In the actuarial present value of the named executive officer's accumulated benefit under all defined benefit pension plans (Including non-qualified pension plans) from the pension plan measurement date used for financial statement reporting purposes in the Company's audited statements for the prior completed fiscal year to the pension plan measurement date used for financial statement reporting purposes in the Company's audited financial statements for the covered fiscal year. All amounts deferred by participants in the Executive Deferral Plan and all prior deferrals under the Executive Deferral Plan are invested in a variety of mutual funds selected by each participant under trust-owned life insurance used by the Company to fund the Executive Deferral Plan; there are no preferential or above-market earnings on this deferred compensation. Messrs. Rhodes and Schuller are not eligible to participate in the Retirement Plan because they were hired by the Company after the Retirement Plan was closed to new entrants.

(5) **All Other Compensation** includes the components listed below.

		Dividend Equivalents ($)	Group Life ($)[a]	401(k) Company Match and Company Contribution ($)[b]	Relocation ($)[c]	Car Allowance ($)[d]	Other ($)	Total ($)
Franklin	2020	—	6,450	7,594	—	4,154	—	18,198
	2019	—	3,450	7,997	—	3,743	6,860	22,050
	2018	—	3,450	8,250	—	6,257	195	17,957
Schuller	2020	—	414	19,600	—	3,675	—	23,689
	2019	—	414	24,501	—	6,536	—	31,451
	2018	—	270	22,040	119,867	7,944	—	150,121
Fox	2020	—	4,211	8,550	—	3,140	—	15,901
	2019	—	3,880	8,400	—	10,467	—	22,747
	2018	—	3,648	8,250	—	10,896	—	22,794
Rhodes	2020	—	180	19,600	—	—	—	19,780
	2019	—	180	17,291	—	—	—	17,471
	2018	—	—	—	76,605	—	—	76,605
Luning	2020	—	1,993	6,816	—	8,252	—	17,061
	2019	—	1,852	8,400	—	7,472	—	17,724
	2018	—	1,758	8,250	—	4,554	—	14,562

(a) Represents the taxable value of group life insurance benefit for the named executive officer.

(b) Includes Company match and year end contribution to the 401(k) and the non-qualified retirement plan.

(c) Represents reimbursement provided under the Company's relocation policy.

(d) The Company provides the use of Company owned or leased vehicles for several of its named executive officers.

(6) **Total compensation** is calculated in accordance with the SEC requirements under Item 402(c) of Regulation S-K, but does not reflect the compensation paid for the year. Specifically, the Total compensation includes the change in pension value in the qualified and non-qualified defined benefit pension plans in which the named executive officers participate. Such pension benefits will not be paid to the named executive officers until they retire from service to the Company.

Grants of Plan-Based Awards

The following table contains information regarding equity and non-equity awards granted to the named executive officers in 2020:

Grants of Plan-Based Awards

Name	Grant	Estimated Future Payouts Under Non-Equity Incentive Plan Awards[1]			Estimated Future Payouts Under Equity Incentive Plan Awards[5]			All Other Stock Awards: Number of Shares of Stock or Units[6][7] (#)	All Other Option Awards: Number of Securities Underlying Options(#)	Exercise or Base Price of Option Awards ($/Sh)	Grant Date Fair Value of Stock and Option Awards ($)
		Threshold[2] ($)	Target[3] ($)	Maximum[4] ($)	Threshold (#)	Target (#)	Maximum (#)				
Franklin	2/26/20	437,500	875,000	1,312,500	26,106	38,244	62,521	—	—	—	2,053,175
Schuller	2/26/20	144,791	289,583	434,374	3,493	6,986	13,972	7,008	—	—	690,876
Fox	2/26/20	140,677	281,354	422,032	3,515	7,029	14,058	7,044	—	—	695,083
Rhodes	2/26/20	129,276	258,553	387,829	2,729	5,458	10,916	6,128	—	—	561,603
Luning	2/26/20	115,705	231,410	347,115	2,443	4,885	9,770	5,799	—	—	513,176

(1) The named executive officers' Non-Equity Incentive Plan Awards are calculated based on the named executive officers' current annual salary multiplied by the executive's target incentive compensation percentage times the factors described on pages 52 through 54.

(2) The Threshold Non-Equity Incentive Plan Award is based on the factors described on pages 52 through 54.

(3) The Target Non-Equity Incentive Plan Award is based on the factors described on pages 52 through 54.

(4) The Maximum Non-Equity Incentive Plan Award is based the factors described on pages 52 through 54.

(5) The February 26, 2020 Equity Incentive Plan Awards in these columns are composed of performance-based stock units for the CEO, Mr. Franklin and service-based restricted stock unit grants to the named executive officers other than Mr. Franklin which vest on the third anniversary of the grant date as long as the named executive officer is providing service to the Company.

(6) The grant date fair value of restricted stock unit awards and restricted stock is based on their fair market value on the date of grant as determined under FASB ASC Topic 718. The assumptions used in calculating the fair market value under FASB's accounting standard for stock compensation are set forth in Note 14, Employee Stock and Incentive Plan contained in the Notes to Consolidated Financial Statements in the Company's Annual Report on Form 10-K for the year ended December 31, 2020.

(7) Represents one-time restricted stock awards.

Outstanding Equity Awards at Fiscal Year-End

	Option Awards				Stock Awards			
	Number of Securities Underlying Unexercised Options		Option Exercise Price	Option Expiration	Number of Shares or Units of Stock That Have Not Vested[1]	Market Value of Shares or Units of Stock That Have Not Vested[1][2]	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested[1][3][4]	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested[1][2]
Name	(#) Unexercisable	(#) Exercisable	($)	Date	(#)	($)	(#)	($)
Franklin	—	27,053	$ 30.47	2/22/2027				
	11,648	23,297	$ 34.51	2/27/2028	39,018	$1,907,877	57,579	$2,788,714
	126,725	63,363	$ 35.94	2/28/2029				
Schuller	—	6,789	$ 30.47	2/22/2027	10,778	$ 526,576	15,298	$ 740,549
	2,908	5,815	$ 34.51	2/27/2028				
	36,805	18,403	$ 35.94	2/28/2029				
Fox	—	6,958	$ 30.47	2/22/2027	10,963	$ 535,666	15,569	$ 753,710
	2,980	5,960	$ 34.51	2/27/2028				
	37,515	18,758	$ 35.94	2/28/2029				
Rhodes	2,285	4,571	$ 35.44	2/27/2028	8,591	$ 419,326	13,478	$ 652,936
	29,129	14,565	$ 35.94	2/28/2029				
Luning	—	5,670	$ 30.47	2/22/2027	7,975	$ 390,020	11,760	$ 569,623
	2,405	4,810	$ 34.51	2/27/2028				
	26,071	13,036	$ 35.94	2/28/2029				

(1) All PSUs are subject to the achievement of the applicable performance criteria for the designated performance period, and continued service with the Company to the vesting date; actual results could vary materially at the end of the performance period. All RSUs for Mr. Franklin are subject to the achievement of the applicable performance criteria and his continued service with the Company to the vesting date. All RSUs for the other NEOs are subject to the individual's continued service with the Company to the vesting date. The following table contains information on outstanding stock option and stock awards held by the named executive officers at December 31, 2020.

	Performance Share Units			Restricted Share Units		
Named Executive Officer	Performance Period Ends	Date to be Vested, Earned and Paid if Applicable	Number of Units Issued[4]	Vesting Period Ends	Date to be Earned And Paid if Applicable	Number of Units Issued at Target[2]
Franklin	12/31/2020	2/27/2021	33,302	2/27/2021	2/27/2021	12,668
	—	—	—	2/28/2022	2/28/2022	12,383
	12/31/2022	2/26/2023	24,277	2/26/2023	2/26/2023	13,967
Schuller	12/31/2020	2/27/2021	8,312	2/27/2021	2/27/2021	3,162
	—	—	—	2/28/2022	2/28/2022	3,596
	12/31/2022	2/26/2023	6,986	2/26/2023	2/26/2023	4,020
Fox	12/31/2020	2/27/2021	8,520	2/27/2021	2/27/2021	3,241
	—	—	—	2/28/2022	2/28/2022	3,666
	12/31/2022	2/26/2023	7,049	2/26/2023	2/26/2023	4,056
Rhodes	12/31/2020	2/27/2021	8,020	2/27/2021	2/27/2021	2,605
	—	—	—	2/28/2022	2/28/2022	2,846
	12/31/2022	2/26/2023	5,458	2/26/2023	2/26/2023	3,140
Luning	12/31/2020	2/27/2021	6,875	2/27/2021	2/27/2021	2,616
	—	—	—	2/28/2022	2/28/2022	2,548
	12/31/2022	2/26/2023	4,885	2/26/2023	2/26/2023	2,811

(2) The market value of the RSU and PSU awards include accrued and unpaid dividend equivalents. The dividend equivalents are accrued based upon the assumption that the PSUs would be issued at target.

(3) The PSU grants made in 2018 for the three year performance period ended December 31, 2020 consisted of four performance goal metrics. The PSU grants made in 2020 for the three year period ended December 31, 2022 consisted of three performance goal metrics. These metrics and the associated achievement are determined by the Compensation Committee as described on pages 56 through 58 of this proxy statement.

(4) The PSU awards that vested on February 27, 2021 were achieved at the 175% level of goal achievement. The following table details the number of PSUs and RSUs that are vested and earned by the named executive officers under the 2018 PSU grants as of the date of this proxy statement.

Named Executive Officer	Performance Period End	Date Vested, Earned and Paid	Number of PSU Shares Issued	Number of RSU Shares Issued
Franklin	12/31/2020	2/27/2021	33,302	12,668
Schuller	12/31/2020	2/27/2021	8,312	3,162
Fox	12/31/2020	2/27/2021	8,520	3,241
Rhodes	12/31/2020	2/27/2021	8,020	2,605
Luning	12/31/2020	2/27/2021	6,875	2,616

Options Exercised and Stock Vested

The following table shows (1) the number of shares of stock options, restricted shares, PSUs or RSUs previously granted to the named executive officers that were exercised, vested or were earned during 2020, and (2) the value realized by those officers upon the exercise, vesting, or payment of such shares based on the closing market price for our shares of Common Stock on the exercise or vesting date.

Options Exercised and Stock Vested

	Option Awards		Stock Awards	
Name	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($)	Number of Shares Acquired on Vesting (#)(1)	Value Realized on Vesting ($)(2)
Franklin	—	—	45,970	2,095,335
Schuller	—	—	11.474	523,007
Fox	—	—	11,761	536,100
Rhodes	—	—	10,625	483,765
Luning	—	—	9,491	432,633

(1) The Number of Shares Acquired on Vesting column represents the number of shares of common stock issued upon the earning and vesting of the 2018 PSUs and RSUs in 2021.

(2) The Value Realized on Vesting column includes the fair value of the shares paid on the vesting date plus dividend equivalents paid for PSUs and RSUs vesting in the amount of $127,338 for Mr. Franklin, $31,784 for Mr. Schuller, $32,580 for Mr. Fox, $28,899 for Mr. Rhodes, and $26,292 for Mr. Luning.

CEO to Median Employee Pay Ratio

Here we provide information about the relationship of the annual total compensation of our employees and the annual total compensation of Mr. Franklin:

To determine our median employee, we chose base salary as our consistently applied compensation measure. We annualized this measure of compensation for those who began their employment during 2020. Using a determination date in December 2020, we calculated the median base salary for all required employees. The annual total compensation of the employee identified as the median employee of the Company (other than Mr. Franklin), was $171,731 and, the annual total compensation of Mr. Franklin was $7,173,359. The annual median employee number was higher than normal due to a gain of $80,448 In present value of the pension benefit. The annual total compensation for the median employee and Mr. Franklin were calculated under Item 402(c) of Regulation S-K.

Accordingly, the ratio of the annual total compensation of Mr. Franklin to the median of the annual total compensation of all employees of the Company was estimated to be 42 to 1.

This pay ratio is a reasonable estimate calculated in a manner consistent with SEC rules based on our payroll and employment records and the methodology described above. The SEC rules for identifying the median compensated employee and calculating the pay ratio based on that employee's annual total compensation allow companies to adopt a variety of methodologies, to apply certain exclusions, and to make reasonable estimates and assumptions that reflect their compensation practices. As such, pay ratios reported by other companies may not be comparable to the pay ratio reported above.

Retirement Plans and Other Post-Employment Benefits

Pension Benefits

The following table shows: (1) the number of years of credited service for the named executive officers under our various retirement plans as of December 31, 2020; (2) the actuarial present value of accumulated benefits under those plans as of December 31, 2020; and, (3) any payments made to the named executive officers during 2020 under those plans.

Pension Benefits

Name	Plan Name	Number of Years of Credited Service*(#)	Present Value of Accumulated Benefit ($)	Payments During Last Fiscal Year ($)
Franklin	Retirement Income Plan for Essential Utilities, Inc. and	22	1,336,754	—
	Subsidiaries Non-Qualified Retirement Plan	28	9,433,460	—
Schuller	Retirement Income Plan for Essential Utilities, Inc. and	—	—	—
	Subsidiaries Non-Qualified Retirement Plan	—	—	—
Fox	Retirement Income Plan for Essential Utilities, Inc. and	13	681,581	—
	Subsidiaries Non-Qualified Retirement Plan	19	2,215,104	—
Rhodes	Retirement Income Plan for Essential Utilities, Inc. and	—	—	—
	Subsidiaries Non-Qualified Retirement Plan	—	—	—
Luning	Retirement Income Plan for Essential Utilities, Inc. and	12	568,005	—
	Subsidiaries Non-Qualified Retirement Plan	18	1,470,351	—

* For benefit accrual purposes, credited service in the Qualified Plan is frozen as of December 31, 2014. For early retirement eligibility purposes, service continues to accrue after December 31, 2014 and will equal that shown for the Non-Qualified Retirement Plan.

Assumptions
Discount Rate: 2.57%

Mortality: For Qualified Plan: blended 50% gender-specific and 50% unisex (blended 50% male and 50% female). Pri-2012 non-disabled annuitant mortality table without collar adjustments projected generationally from 2012 with Scale MP-2020 improvements.

For Non-Qualified Plan: Pri-2012 unisex (blended 50% male and 50% female) non-disabled annuitant mortality tables without collar adjustments projected generationally from 2012 with Scale MP-2020 improvements.

Retirement Income Plan (the Retirement Plan)

The Company sponsors a qualified defined benefit Retirement Plan to provide retirement income to the Company's employees hired prior to certain dates starting in 2003. Effective December 31, 2014, the named executive officers (other than Mr. Schuller, and Mr. Rhodes who are not participants in the plan) ceased accruing a benefit under the Retirement Plan. Specifically, their plan compensation and credited service for purposes of determining their benefits were frozen in the Retirement Plan as of December 31, 2014.

For the portion of the Retirement Plan covering certain of the named executive officers, plan compensation is defined as total compensation paid, but excludes contributions made by the Company to a plan of deferred compensation, distributions from a deferred compensation plan, amounts realized from the exercise of stock options or when restricted shares underlying restricted stock units or performance shares become freely transferable, fringe benefits, welfare benefits, reimbursements or other expense allowances, moving expenses and commissions. The Employee Retirement Income Security Act of 1974, as amended (ERISA), imposes maximum limitations on the annual amount of pension benefits that may be paid, and the amount of compensation that may be taken into account in calculating benefits, under a qualified, funded, defined benefit pension plan such as the Retirement Plan. The Retirement Plan complies with these ERISA limitations.

Benefits earned under the final pay formula for the retirement plan are equal to 1.35% of average plan compensation plus 0.45% of average plan compensation above Covered Compensation for each year of credited service up to 25 years, and 0.5% of average plan compensation for each year of credited service above 25 years. The annual benefit is further subject to a minimum benefit schedule. Average plan compensation is defined as the average of plan compensation over the highest five consecutive years out of the last ten years. Covered Compensation is defined as the average of the Social Security Wage Bases (as defined in the Retirement Plan) in effect for each calendar year during the 35-year period ending with the last day of the calendar year of the benefit determination. Effective December 31, 2014, years of credited service and plan compensation in the Retirement Plan was frozen for the named executive officers (other than Mr. Schuller and Mr. Rhodes).

Under the terms of the Retirement Plan, a Company participant becomes fully vested in his or her accrued pension benefit after five years of credited service. All named executive officers (with the exception of Messrs. Rhodes and Schuller) are vested in the Retirement Plan. Participants may retire as early as age 55 with 10 years of service. Unreduced benefits are available when a participant attains the earlier of age 65 with 5 years of vesting service or age 62 with 30 years of vesting service. Otherwise, benefits are reduced 3% for each year by which retirement precedes the attainment of age 65 or are reduced actuarially in accordance with the terms of the Retirement Plan and federal law if payment occurs before age 55. Pension benefits earned are payable in the form of a lifetime annuity or can be collected as a lump sum benefit. Married individuals may receive a reduced benefit paid in the form of a qualified joint and survivor annuity. Mr. Fox is currently eligible to retire under the Retirement Plan.

Non-Qualified Retirement Plan

Effective December 1, 1989, the Board of Directors adopted a supplemental benefits plan for salaried employees of the Company. On December 1, 2014, the Board of Directors adopted an amended benefits plan for salaried employees of the Company (the Non-Qualified Pension Benefit Plan). The Non-Qualified Pension Benefit Plan is a plan that is intended to provide an additional pension benefit to Company participants in the Retirement Plan and their beneficiaries whose benefits under the Retirement Plan are adversely affected by the ERISA limitations described above. Effective December 31, 2014, the Non-Qualified Pension Benefit Plan was amended to include credited service and plan compensation that the named executive officers would have otherwise accrued under the Retirement Plan if their benefit had not been frozen in the Retirement Plan. In addition, deferred compensation is excluded from the Retirement Plan plan compensation definition but is included in the calculation of benefits under the Non-Qualified Pension Benefit Plan.

The benefit under the Non-Qualified Pension Benefit Plan is equal to the difference between:

(i) the amount of the benefit the Company participant would have been entitled to under the Retirement Plan absent such ERISA limitations, absent the freezing of plan compensation and credited service, and including deferred compensation in the final average earnings calculation; and

(ii) the amount of the benefit actually payable under the Retirement Plan.

Participants may retire as early as age 55 with 10 years of service under the Non-Qualified Pension Benefit Plan. Unreduced benefits are available when a participant attains the earlier of age 65 with 5 years of service or age 62 with 30 years of service. Otherwise, benefits are reduced 3% for each year by which retirement precedes the attainment of age 65. Pension benefits earned under the Non-Qualified Pension Benefits Plan are payable in the form of a lump sum, unless an alternative election is made. An alternative election may be made such that benefits are paid as an annuity for life (and the life of the participant's spouse upon death), in a series of installments or under certain circumstances transferred at separation from employment to up to five separate distribution accounts under the Company's Executive Deferral Plan.

Retirement Plans and Other Post-Employment Benefits

Messrs. Franklin, Fox, and Luning are earning benefits under the Non-Qualified Pension Benefit Plan and are fully vested in those benefits. Messrs. Franklin and Fox are currently eligible to retire under the Non-Qualified Pension Benefit Plan. Messrs. Rhodes and Schuller do not earn any benefits under the Non-Qualified Pension Benefit Plan. In 2009, the Company began to fund the Non- Qualified Pension Benefit Plan through the use of trust-owned life insurance.

Actuarial Assumptions used to Determine Values in the Pension Benefits Table

The amounts shown in the Pension Benefits Table above are actuarial present values of the benefits accumulated through the date shown. An actuarial present value is calculated by estimating expected future payments starting at an assumed retirement age, weighting the estimated payments by the estimated probability of surviving to each post-retirement age, and discounting the weighted payments at an assumed discount rate to reflect the time value of money. The actuarial present value represents an estimate of the amount, which, if invested today at the discount rate, would be sufficient on an average basis to provide estimated future payments based on the current accumulated benefit. Assumptions used to determine the values are the same as those disclosed on the Company's financial statements as of those dates with the exception of the assumed retirement age and the assumed probabilities of leaving employment prior to retirement. Retirement was assumed to occur at the earliest possible unreduced retirement age (or current age, if later) for each plan in which the executive participates. For purposes of determining the earliest unreduced retirement age, service was assumed to be granted until the actual date of retirement. Actual benefit present values will vary from these estimates depending on many factors, including an executive's actual retirement age. The key assumptions included in the calculations are as follows:

Retirement Age

	December 31, 2020	December 31, 2019
Discount Rate	2.57%	3.35%
Retirement Age		
Franklin	62	62
Fox	65	65
Luning	65	65
Termination, pre-retirement mortality and disability rates	None	None
Post-Retirement Mortality	50% of the present value for the Retirement Plan is calculated using the PRI-2012 gender specific nondisabled annuitant mortality tables projected generationally from 2012 with Scale MP-2018 improvements. 50% of the present value of the Retirement Plan and 100% of the present value for the Non-Qualified Pension Plan is calculated using a 50% male and a 50% female blended PRI-2012 nondisabled annuitant mortality table projected generationally from 2012 with Scale MP-2018 improvements.	50% of the present value for the Retirement Plan is calculated using the PRI-2012 gender specific nondisabled annuitant mortality tables projected generationally from 2012 with Scale MP-2018 improvements. 50% of the present value of the Retirement Plan and 100% of the present value for the Non-Qualified Pension Plan is calculated using a 50% male and a 50% female blended PRI-2012 nondisabled annuitant mortality table projected generationally from 2012 with Scale MP-2018 improvements.

Please note the following with regard to the incremental pension value above that included in the Pension Benefits Table upon retirement, termination, death and disability:

* Upon termination, the benefits for Mr. Franklin and Mr. Luning are assumed to be payable as an immediate lump sum from the qualified pension plan and lump sum payment at age 55 from the nonqualified plan (as required by the plan provisions of the nonqualified pension plan). Benefits Payable from the qualified pension plan are actuarially equivalent to the benefit payable at age 65. Benefits payable from the non-qualified plan have been reduced for early commencement by 3% per year of commencement prior to age 65 to the assumed age 55 commencement date.

  Upon retirement, the benefits for Mr. Fox are payable as an immediate lump sum from the qualified pension plan and the nonqualified pension plan. Benefits have been reduced for early commencement by 3% per year of commencement prior to age 65. Retiree medical plan eligibility is age 55 with 15 years of service. We have not included retiree medical plan values for Mr. Franklin and Mr. Luning since they have not attained retirement eligibility for that plan.

Assumptions
Discount Rate: 2.57%

Mortality:
For Qualified Plan: blended 50% gender-specific and 50% unisex (blended 50% male and 50% female). Pri-2012 non-disabled annuitant mortality table without collar adjustments projected generationally from 2012 with Scale MP-2020 improvements.

For Non-Qualified Plan: Pri-2012 unisex (blended 50% male and 50% female) non-disabled annuitant mortality tables without collar adjustments projected generationally from 2012 with Scale MP-2020 improvements.

Non-Qualified Deferred Compensation

The following table contains information regarding contributions to, earnings on, withdrawals from and balances as of December 31, 2020 for our non-qualified Executive Deferral Plan.

Non-Qualified Deferred Compensation

Name	Registrant Contributions in Last FY ($)(1)	Individual Contributions in Last FY ($)(1)	Aggregate Earnings in Last FY ($)(2)	Aggregate Withdrawals/ Distributions ($)	Aggregate Balance at Last FYE ($)(3)
Franklin	15,387	—	14,956	—	136,317
Schuller	33,290	—	1,505	—	43,032
Fox	3,440	113,231	64,844	—	552,178
Rhodes	29,496	4,244	1,591	—	39,654
Luning	2,275	—	314	—	4,536

(1) The Company's and the named executive officers' contributions to this plan are included in the base salary earned in 2020 in the Summary Compensation Table.

(2) In 2020, the deferred amounts were invested in mutual funds chosen by the participant under a trust-owned life insurance policy maintained by the Company to fund the Executive Deferral Plan. The earnings shown in this column include the earnings on those mutual funds.

(3) Prior year contributions were reflected in the Summary Compensation Table for prior years.

Employees with total projected W-2 compensation for 2020 in excess of $175,000 were eligible to participate in the Company's Executive Deferral Plan for 2020. Participants may defer up to 90% of their salary and 90% of their non-equity incentive compensation under the Company's Annual Cash Incentive Compensation Plan. At the time the participant elects to make a deferral under the Executive Deferral Plan, the participant is also required to elect the form of payment with respect to the amounts deferred for the upcoming calendar year. If a separation distribution account is elected, the participant may choose to receive his or her distribution in either a lump sum payment or, subject to certain requirements, in annual installments over 2 to 15 years. If a flexible distribution account is elected, the participant will receive his or her distribution in a lump sum payment. The executive officers, including the named executive officers, may not commence the receipt of their account balances and the earnings on these deferrals sooner than the first day of the seventh month following the date of the executive's separation from employment.

Potential Payments Upon Termination or Change-In-Control

Double-Trigger Change-In-Control

The Company maintains double-trigger change-in-control agreements with its named executive officers. Payments under these agreements are triggered if the named executive officer's employment is terminated other than for cause or the executive resigns for good reason, as defined in the agreements, within two years after consummation of a change-in-control transaction involving the Company.

The following table provides a summary of the benefits to which each named executive officer would be entitled under the change-in-control agreements.

Payment in Lieu

Name	Multiple of Base Compensation	Years of Health Benefit Continuation Period	Outplacement Services
Franklin	3	3	36 Months
Fox	2	2	6 Months
Rhodes	2	2	6 Months
Schuller	2	2	6 Months
Luning	2	2	6 Months

Potential Payments Upon Termination or Change-In-Control

For purposes of the change-in-control agreements, Base Compensation is defined as current base annual salary, plus the greater of the named executive officer's target bonus for the year in which the executive incurs a termination of employment, or the last actual bonus paid to the named executive officer under the Annual Cash Incentive Compensation Plan (or any successor plan maintained by the Company), in all capacities with the Company and its subsidiaries or affiliates. The executive's Base Compensation would be determined prior to reduction for salary deferred by the named executive officer under any deferred compensation plan of Essential and its subsidiaries or affiliates, or otherwise. The named executive officer is entitled to receive a pro-rata share of the named executive officer's target annual cash incentive compensation based on the portion of the calendar year that has elapsed at the time of the named executive officer's termination. The named executive officer is also entitled to receive a lump sum payment in lieu of the continuation of certain health benefits for a period of 2 years and outplacement services.

The payment of the multiple of Base Compensation would be made in a lump sum within 60 days after the executive's termination as defined under the agreement, although under the requirements of Section 409A of the Code, part or all of such payment may need to be deferred until the first day of the seventh month following the date of the named executive officer's separation from employment. Each executive is required to execute a standard release of the Company as a condition to receiving the payment under the agreement.

For equity incentive awards made under the Plan: (i) for restricted stock units without performance goals, if a change-in-control occurs prior to the vesting date, the restricted stock units would remain outstanding and vest on the vesting date or, if earlier, vest upon a qualified termination event following a change-in-control; (ii) for Options, if a change-in-control occurs prior to any vesting date, the Options would remain outstanding and vest in accordance with the vesting schedule, or, if earlier, accelerate and vest upon a qualified termination event following a change-in-control; and (iii) for performance shares, if a change-in-control occurs, performance would be measured at the date of the change-in-control, and the number of performance shares earned to be determined as of the date of the change-in-control as follows:

- If a change-in-control occurs more than one year after the grant date, then the number of performance shares earned as of the change-in-control date would be the greater of (i) the amount earned based on actual performance, or (ii) the target number of performance shares.
- If a change-in-control occurs within one year after the grant date, then the number of performance shares earned as of the change-in-control date would be a pro-rata portion (based on the number of whole months in the applicable performance period worked from the date of grant to the change-in-control) of the greater of (i) the amount earned based on actual performance, or (ii) the target number of performance shares.

Any performance shares that are not earned at the change-in-control date would be forfeited. The vesting of these equity incentives is applicable to all grantees under the Plan.

The number of shares underlying the performance share awards will be earned and paid out at the end of the performance period, or, if earlier, as a double-trigger payment on the date of termination of employment following or in connection with the change-in-control.

For purposes of the change-in-control agreements and the vesting of unvested equity incentives as described above, a change-in- control, subject to certain exceptions, means:

1. any person (including any individual, firm, corporation, partnership or other entity except Essential, any subsidiary of Essential, any employee benefit plan of Essential or of any subsidiary, or any person or entity organized, appointed or established by Essential for or pursuant to the terms of any such employee benefit plan), together with all affiliates and associates of such person, shall become the beneficial owner in the aggregate of 20% or more of the common stock of Essential then outstanding; or

2. during any 24-month period, individuals who at the beginning of such period constitute the Board of Directors of Essential cease for any reason to constitute a majority thereof, unless the election, or the nomination for election by Essential's shareholders, of at least seventy-five percent of the directors who were not directors at the beginning of such period was approved by a vote of at least seventy-five percent of the directors in office at the time of such election or nomination who were directors at the beginning of such period; or

3. there occurs a sale of 50% or more of the aggregate assets or earning power of Essential and its subsidiaries, or its liquidation is approved by a majority of its shareholders or Essential is merged into or is merged with an unrelated entity such that following the merger the shareholders of Essential no longer own more than 50% of the resultant entity.

The change-in-control agreement for Mr. Franklin and the form of change-in-control agreement for the other named executive officers have been filed with the SEC as exhibits to the Company's periodic report filings.

Retirement and other Benefits

Under the terms of our qualified and non-qualified defined benefit retirement plans, eligible salaried employees, including the certain named executive officers, are entitled to certain pension benefits upon their termination, retirement, death or disability. In general, the terms under which benefits are payable upon these triggering events are the same for all participants under the qualified and nonqualified plans. The present value of accumulated pension benefits, assumed payable at the earliest unreduced age (or current age, if later), for the named executive officers is shown in the Pension Benefits Table on page 75. The pension benefit values included in the tables on pages 75 through 77 reflect the incremental value above the amounts shown in the Pension Benefits Table for benefits payable upon each triggering event from all pension plans in the aggregate.

The Company sponsors postretirement medical plans to subsidize retiree medical benefits for employees hired prior to certain dates starting in 2003. Under the postretirement medical plans, employees are generally eligible to retire upon attainment of age 55 and completion of 15 years of service. Upon retirement, eligible participants are entitled to receive subsidized medical benefits prior to attainment of age 65 where the subsidy provided is based upon age and years of service upon retirement. Upon attainment of age 65, eligible participants are entitled to receive employer contributions into a premium reimbursement account which may be used by the retiree in paying medical and prescription drug benefit premiums. Mr. Fox is eligible for these benefits. The postretirement medical benefits shown in the tables on pages 82 through 84 are those which are payable from the Company under each of the triggering events.

Assumptions used to determine the values are the same as those disclosed on the Company's financial statements. In addition, the Company assumes immediate termination, retirement, death or disability have occurred at December 31, 2020 for purposes of the tables on pages 82 through 84. Participants not eligible to receive benefits if leaving under a triggering event as of December 31, 2020 are shown with zero value in the tables.

Upon termination for any reason, the named executive officer in our Executive Deferral Plan, would be entitled to a distribution of their account balances as shown in the Non-qualified Deferred Compensation table on page 78, subject to the restrictions under the Executive Deferral Plan described on pages 76 and 77. The values of these account balances are not included in the tables on pages 82 through 84. The named executive officers are also eligible for the same death and disability benefits of other eligible salaried employees. These common benefits are not included in the tables on pages 82 through 84.

Under the terms of the Amended and Restated Omnibus Equity Compensation Plan (the Plan):

- if the employment of the named executive officer terminates, any vested Options will remain exercisable for 90 days following the date of termination, or if shorter, the remaining term of the stock option;
- if the named executive officer retires, other than in a change-in-control context, a prorated portion of the unvested Options will vest if the applicable performance goal is met for the year in which retirement occurs, and the vested Options will remain exercisable for the full term of the Options;
- if the named executive officer dies or becomes disabled any unvested portion of any outstanding Options will become immediately vested, and will remain exercisable for one year following the termination date; and,
- if, in connection with a change-in-control, the named executive officer's employment is terminated by retirement, termination without cause or disability or death, all unvested stock options will accelerate and vest on the termination date. The vested Options shall be exercisable for the applicable period.

Under the terms of the RSUs granted under the Plan, grantees of RSUs will (i) vest in a pro-rata portion of unvested grants upon the grantee's termination of employment as a result of retirement, or (ii) vest immediately in unvested grants following the grantee's termination of employment as a result of death or disability. Shares of Company stock equal to the applicable portion of the restricted stock units shall be issued to the grantee within 60 days following the grantee's retirement, death or disability, subject to applicable tax withholding and the values of these restricted stock units as of December 31, 2020 are included in the tables on pages 82 through 84.

Under the terms of the performance share unit grants under the Plan, grantees of performance share units will (i) earn a pro- rata portion of unvested grants upon the grantee's termination of employment as a result of retirement or earn immediately any unvested grants following the grantee's termination of employment as a result of death or disability. Shares of Company stock equal to the applicable portion of the performance share units shall be issued to the grantee on the vesting date for such performance share units and the estimated values of these performance share units based on interim performance through December 31, 2020 are included in the tables on pages 82 through 84. For purposes of the performance share units tied to the performance goal of cumulative earnings before taxes, the Company's actual performance is measured against a pro-rata portion of the performance goal as of year-end. Actual performance results for the full performance period may be substantially different from the amounts presented in the tables on pages 82 through 84.

Potential Payments Upon Termination or Change-In-Control

Termination

With respect to a termination event other than in connection with a change-in-control, the severance plan applicable to the named executive officers other than Mr. Franklin, and Mr. Franklin's Employment Agreement as described on page 60, provides the named executive officers with a severance benefit of one full year salary and one full year projected bonus and up to six months of continued medical benefits if the named executive officer is terminated for any reason other than for cause.

In addition, once vested, participants are eligible to receive qualified benefits under the Retirement Plan and nonqualified benefits from the Non-Qualified Pension Benefit Plan. Benefits vest upon attaining five years of service. Pension benefits for Messrs. Franklin, Fox, and Luning are vested and payable from the Retirement Plan as well as the Non-Qualified Pension Benefit Plan.

The full value of the benefits payable due to termination is determined based on the assumed timing and form of the benefits payable as follows: the benefits for Messrs. Franklin, Fox and Luning are payable as an immediate lump sum payment or life annuity from the Retirement Plan and an immediate lump sum payment at age 55 from the non-qualified plans. Benefits have been reduced for early commencement by 3% per year of commencement prior to age 65.

Retirement

In the case of retirement, the present value of benefits is determined in the same manner as termination. Messrs. Rhodes, Schuller, and Luning are not currently eligible for retirement benefits. Messrs. Franklin and Fox are eligible for retirement.

Death

Vested benefits under the Retirement Plan are payable to the participant's surviving spouse as a single life annuity upon the death of the participant. The benefit will be paid to the spouse as early as the deceased participant's earliest retirement age (age 55 with ten years of service or age 65). The benefit will be equal to 75% of the benefit calculated as if the participant had separated from service on the date of death (assumed to be December 31, 2020 in the tables on pages 75 through 77), survived to the earliest retirement age and retired with a qualified contingent annuity. Vested benefits under the Non-Qualified Pension Benefit Plan are payable to the participant's surviving spouse as a lump sum (or in certain cases transferred to the Company's Executive Deferral Plan) upon the death of the participant. The benefit will be equal to 75% of the benefit calculated as if the participant had separated from service on the date of death (assumed to be December 31, 2020 in the tables on pages 75 through 77), survived to the earliest retirement age and retired with a qualified contingent annuity. For each of the participants, the total present value of pension benefits payable upon death is less than the amount shown in the Pension Benefits Table. For purposes of the benefit calculations shown, spouses are assumed to be three years younger than the participant.

Disability

If an individual is terminated as a result of a disability with less than ten years of service, the benefits are payable in the same amount and form as an individual who is terminated. Individuals who terminate employment as a result of a disability with at least ten years of service are entitled to future accruals until age 65 (or earlier date if elected by the participant) assuming level future earnings and continued service. The benefits are not payable until age 65, unless elected by the participant for an earlier age. Upon the attainment of age 65, the individual would be entitled to the same options as an individual who retired from the Retirement Plan.

Messrs. Franklin, Fox, and Luning have each completed ten years of service. Therefore, for purposes of this present value calculation, these participants are assumed to accrue additional service and earnings until age 65, at which time pension payments are assumed to commence. Mr. Schuller and Mr. Rhodes have not completed ten years of service.

Termination Events Compensation

The total estimated value of the payments that would be triggered by a termination following a change-in-control, a termination other than for cause without a change-in-control, retirement, death or disability for the named executive officers calculated assuming that the triggering event for the payments occurred on December 31, 2020 and assuming a value for our Common Stock as of December 31, 2020 for purposes of valuing the vesting of the equity incentives are shown on the following page:

Potential Payments Upon Termination or Change-In-Control

Christopher H. Franklin

Payments and Benefits Upon Separation	Change-in-Control $	Termination $	Retirement $	Death $	Disability $
Triggered Payments and Benefits					
Severance Payment	6,328,875	3,500,000	—	—	—
Prorated current year bonus	875,000	875,000	875,000	875,000	875,000
Payment of accrued dividend equivalents	180,550	—	134,203	180,550	180,550
Vesting of restricted stock	—	—	—	—	—
Vesting of restricted share units	1,845,161	—	1,107,122	1,845,161	1,845,161
Vesting of performance share units	3,756,188	—	2,093,302	3,756,188	3,756,188
Vesting of stock options	2,604,096	—	1,740,258	2,604,096	2,604,096
Continuation of welfare benefits	91,509	14,514	—	—	—
Outplacement services	67,500	—	—	—	—
Vested Retirement Benefits					
Incremental pension value above that included in the Pension Benefits Table	—	—	—	—	1,049,834
Present value of retiree medical benefits	229,783	229,783	229,783	—	229,783
Total	15,978,662	4,619,297	6,179,668	9,260,995	10,540,612

Daniel J. Schuller

Payments and Benefits Upon Separation	Change-in-Control $	Termination $	Retirement $	Death $	Disability $
Triggered Payments and Benefits					
Severance Payment	1,708,226	735,095	—	—	—
Prorated current year bonus	289,583	289,583	289,583	289,593	289,583
Payment of accrued dividend equivalents	47,592	—	34,479	47,592	47,592
Vesting of restricted stock	141,303	—	117,752	141,303	141,303
Vesting of restricted share units	509,692	—	297,953	509,692	509,692
Vesting of performance share units	1,020,797	—	545,620	1,020,797	1,020,797
Vesting of stock options	738,091	—	488,215	738,091	738,091
Continuation of welfare benefits	59,506	14,514	—	—	—
Outplacement services	20,000	—	—	—	—
Vested Retirement Benefits					
Incremental pension value above that included in the Pension Benefits Table	—	—	—	—	—
Present value of retiree medical benefits	—	—	—	—	—
Total	4,534,790	1,039,192	1,773,602	2,747,058	2,747,058

Potential Payments Upon Termination or Change-In-Control

Richard S. Fox

Payments and Benefits Upon Separation	Change-in-Control $	Termination $	Retirement $	Death $	Disability $
Triggered Payments and Benefits					
Severance Payment	1,659,688	714,207	—	—	—
Prorated current year bonus	281,354	281,354	281,354	281,354	281,354
Payment of accrued dividend equivalents	48,545	—	35,265	48,545	48.545
Vesting of restricted stock	141,303	—	117,752	141,303	141,303
Vesting of restricted share units	518,440	—	303,977	518,440	518,440
Vesting of performance share units	1,036,306	—	422,178	1,036,306	1,036,306
Vesting of stock options	752,952	—	498,222	752,952	752,952
Continuation of welfare benefits	42,222	10,298	—	—	—
Outplacement services	20,000	—	—	—	—
Vested Retirement Benefits					
Incremental pension value above that included in the Pension Benefits Table	—	—	358,806	—	1,065,380
Present value of retiree medical benefits	383,462	383,462	383,462	—	383,462
Total	4,884,272	1,389,321	2,401,016	2,778,900	4,227,742

Matthew R. Rhodes

Payments and Benefits Upon Separation	Change-in-Control $	Termination $	Retirement $	Death $	Disability $
Triggered Payments and Benefits					
Severance Payment	1,591,478	430,921	—	—	—
Prorated current year bonus	258,553	258,553	258,553	258,553	258,553
Payment of accrued dividend equivalents	40,892	—	22,365	40,892	40,892
Vesting of restricted stock	141,303	—	117,752	141,303	141,303
Vesting of restricted share units	406,268	—	238,738	406,268	406,268
Vesting of performance share units	869,684	—	344,215	869,684	869,684
Vesting of stock options	577,171	—	379,069	577,171	577,171
Continuation of welfare benefits	59,220	14,444	—	—	—
Outplacement services	20,000	—	—	—	—
Vested Retirement Benefits					
Incremental pension value above that included in the Pension Benefits Table	—	—	—	—	—
Present value of retiree medical benefits	—	—	—	—	—
Total	3,964,569	703,917	1,360,692	2,293,871	2,293.871

Potential Payments Upon Termination or Change-In-Control

Christopher P. Luning

Payments and Benefits Upon Separation	Change-in-Control $	Termination $	Retirement $	Death $	Disability $
Triggered Payments and Benefits					
Severance Payment	1,424,404	617,093	—	—	—
Prorated current year bonus	231,410	231,410	231,410	231,410	231,410
Payment of accrued dividend equivalents	37,032	—	27,636	37,032	37,032
Vesting of restricted stock	141,303	—	117,752	141,303	141,303
Vesting of restricted share units	377,138	—	227,399	377,138	377,138
Vesting of performance share units	764,076	—	320,628	764,076	764,076
Vesting of stock options	536,072	—	358,336	536,072	536,072
Continuation of welfare benefits	59,220	14,444	—	—	—
Outplacement services	20,000	—	—	—	—
Vested Retirement Benefits					
Incremental pension value above that included in the Pension Benefits Table	221,278	221,278	—	—	1,314,441
Present value of retiree medical benefits	—	—	—	—	—
Total	3,811,933	1,084,225	1,283,161	2,087,031	3,401,472

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc.	:	C-2021-3028467 (WW)
	:	

VERIFICATION

I, Ralph C. Smith, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 1-SR, 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: December 14, 2021
*320947

Signature: Ralph C. Smith
Ralph C. Smith

Consultant Address: Larkin & Associates, PLLC
15728 Farmington Road
Livonia, MI 48154

OCA Statement 2SR

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:		
	:		
v.	:	Docket Nos.	R-2021-3027385
	:		R-2021-3027386
Aqua Pennsylvania, Inc.	:		
Aqua Pennsylvania Wastewater, Inc.	:		

Surrebuttal Testimony of
Morgan N. DeAngelo

On Behalf of
Pennsylvania Office of Consumer Advocate

December 14, 2021

Introduction:

Q. Please state your name, business address and occupation.

A. My name is Morgan N. DeAngelo. 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. Have you previously provided testimony in this case?

A. Yes. I provided direct testimony in this case on November 10, 2021, in OCA Statement 2.

Q. What is the purpose of your surrebuttal testimony?

A. In my surrebuttal testimony, I will comment on the rebuttal testimony of Aqua Pennsylvania Inc. ("Aqua") witnesses William C. Packer (Aqua Rebuttal Testimony Statement No. 1-R), Erin M. Feeney (Aqua Rebuttal Testimony Statement No. 2-R), and Christine L. Saball (Aqua Rebuttal Testimony Statement No. 8-R) which all respond to issues discussed in my direct testimony.

Q. Please summarize your direct testimony.

A. My direct testimony discusses details regarding the impacts the ongoing COVID-19 Pandemic has had, Aqua's request for a positive acquisition adjustment related to assets purchased from the Borough of Phoenixville ("Borough"), and the proposed Federal Tax Adjustment Charge.

Response to Aqua's Rebuttal Testimony:

Aqua Statement 1-R, William C. Packer regarding the Impacts of the COVID-19 Pandemic

Q. Please summarize Mr. Packer's rebuttal testimony regarding your direct testimony.

A. Mr. Packer stated in his rebuttal testimony that Aqua recognizes the impacts the COVID-19 Pandemic has had on their customers and communities it services. He goes on to discuss new practices and efforts Aqua provided to help its customers who are struggling and says Aqua continues to be sensitive to any economic pressure on its customers. However, he concluded by saying Aqua's proposed rate relief is just and reasonable in this case.

Q. Do you agree with Mr. Packer that rate relief in regard to the COVID-19 Pandemic is just and reasonable in this case?

A. No. Mr. Packer anecdotally, without any supporting evidence, testified that "[w]hile I do not think anyone could say with any certainty that the pandemic is over, I can observe that people are back to work, commercial business are open, and expectations of additional actions from our government as far as infrastructure investment and other governmental assistance is happening." (Aqua Statement 1-R, p. 4 at 20-24). However, as shown in Table 1 of my direct testimony, Aqua's service territory is still experiencing an overall unemployment rate of 5.4%.[1]

Q. Were there any witnesses at the Public Input Hearings that expressed concern regarding impacts of the COVID-19 Pandemic?

[1] OCA Statement 2, p. 2-3.

A. Yes. Many of Aqua's customers are still facing and will continue to face negative impacts brought forth by COVID-19 Pandemic. Multiple witnesses came forward at the public input hearings to express concerns, many of which specifically referenced the Pandemic. State House Representative Christina Sappey testified that almost 30 percent of Chester County residents over the age of 65 are considered economically insecure. She further testified as to being particularly concerned with the increase for seniors on fixed incomes and for working families, many have experienced job loss or insecurity because of the COVID-19 Pandemic. Representative Sappey testified that rate increases have a disproportionate and burdensome effect on low-income seniors and working families who are already trying to make ends meet.[2]

Witness Elien Canci stated "I'm on a fixed income and I was forced to retire because of the COVID and my boss had to retire also." She also stated it is really hard for her to get a job due to her age and her financials are limited, so a rate increase at this time will not make things easier.[3]

Witness Nancy Deutsch, executive director at Jenner's Pond Retirement Community testified that the timing of the increase is particularly bad. She stated the population she serves has been most severely impacted by COVID-19 and any increase received at her business will have to be passed down to the residents.[4]

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[2] 11/10/2021, 6pm, Public Input Hearing Tr. 279-281.
[3] 11/10/2021, 6pm, Public Input Hearing Tr. 283-284.
[4] 11/10/2021, 6pm, Public Input Hearing Tr. 315-316.

Witness Mary Owen testified that "The fact that Aqua PA instigated this proposed 40 percent increase, mailing us large forms with tiny writing several months ago in the midst of a pandemic, speaks volumes about their value system and their ethics towards their customers. It was as if there was nothing of consequence requiring our attention and significantly altering our lives and livelihood. That's a pandemic." (Public Input Hearing Tr. at 51)

Senator Carolyn Comitta had witness Karina Gonzalez speak on her behalf. Ms. Gonzalez explained how an increase will place an undue burden on residents, communities and those on fixed incomes across the District, and goes on to mention the continuing unprecedented challenges associated with the evolving Pandemic and ongoing economic crisis. Many residents have been forced to apply for utility assistance to maintain service and avoid shut off, as a result of the Pandemic. Senator Comitta expressed concern that the proposed rate increase will only cause a greater burden.[5]

Witness Adam Anders testified that a rate increase is a very big hardship on consumers, especially during a Pandemic when there are already exorbitant rates.[6]

Elizabeth Kearns stated in her testimony that the Pandemic has sickened millions of people and put them out of work. Many customers in the Aqua service area are still struggling,

[5] 11/09/2021, 6pm, Public Input Hearing Tr. at 140
[6] 11/09/2021, 6pm, Public Input Hearing Tr. at 145

and this is not the time to hit Aqua customers with a rate increase for something customers are forced to buy.[7]

Witness Rosemary Horstman said "Water and sewage bills are not the only bills that people must pay because of the widespread destruction caused by the pandemic, most costs are rising." (Public Input Hearing Tr. at 160, lines 11-14). Ms. Horstman noted that the proposed rate increase exceeds the inflation rate and that she does not believe the excessive increase is necessary.[8]

Catherin Moran testified that even without the Pandemic, the proposed rate increase is too expensive for many customers. She stated that this increase would be difficult for her to pay, considering customers have no choice but to pay for this basic necessity.[9]

Witness Cynthia Ziegler stated "My husband was showering twice a day, as he is an essential worker. Of course the water went up, during the time the water bill and the sewer bill went up. During the time of this Pandemic, the increase has been astronomical. I feel it is unjust. I feel it is unfair. There are currently people in our community that have lost jobs due to the pandemic, who are staying home with children, using more water because they're home, because of the pandemic." (Public Input Hearing Tr. at 226, lines 1-10). She testified that rates are too high for a little community and for those on salaries that are budgeted.

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[7] 11/09/2021, 6pm, Public Input Hearing Tr. 154-155.
[8] 11/09/2021, 6pm, Public Input Hearing Tr. 160.
[9] 11/09/2021, 6pm, Public Input Hearing Tr. 172.

Senator Katie Muth testified that throughout Aqua's service territory, ratepayers are still firmly in the grip of the COVID-19 Pandemic. She further testified that the communities have endured enough devastation to local and regional economies, and they simply cannot afford an increase, including those living on fixed incomes. Senator Muth stated that it is unreasonable to raise rates on essential water and wastewater services as the impact of the Pandemic continues to unfold in unpredictable ways.[10]

Finally, witness Steven Arraya testified that juggling other bills on a monthly basis in order to pay the already high Aqua bill has become a difficult task. He said it creates more stress and tension in an already difficult Pandemic situation. Mr. Arraya noted that people are currently struggling more than ever to get by due to the Pandemic and increasing already extreme rates will increase the current burden on customers.[11]

Q. What can you conclude from the witnesses that testified in the Public Input Hearing?

A. In summary, it is clear that many of Aqua's customers are still struggling from the negative impacts of the COVID-19 Pandemic. Increasing rates during a Pandemic will only set these customers and communities further back, causing more of a struggle. At this point, a rate increase is not just and reasonable.

Q. Has the unemployment rate for Aqua's service territory changed since you submitted your direct testimony?

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[10] 11/12/2021, 1pm, Public Input Hearing Tr. 382-384.
[11] 11/12/2021, 1pm, Public Input Hearing Tr. 424-426.

A. Yes. As of October 2021, the average unemployment rate for Aqua's overall service territory is 5.4%, shown in Table 1[12]. The unemployment rate for Pennsylvania sits at 6.0%, which is higher than the United States' rate of 4.2%.[13] This data continues to reflect the effects brought forth by the COVID-19 Pandemic.

Table 1:

Division	County	Unemployment Rate	Division	County	Unemployment Rate
Roaring Creek / Susquehanna	Adams	4.1%	Honesdale / White Haven	Carbon	5.7%
	Bradford	4.7%		Lackawanna	5.6%
	Columbia	5.1%		Lehigh	5.5%
	Cumberland	3.8%		Luzerne	6.8%
	Juniata	4.2%		Monroe	6.9%
	Northumberland	5.9%		Northampton	4.8%
	Schuylkill	5.7%		Pike	6.3%
	Snyder	4.9%		Schuylkill	5.7%
Shenango	Clarion	5.7%		Susquehanna	4.6%
	Clearfield	6.1%		Wayne	5.5%
	Crawford	5.7%		Wyoming	5.4%
	Forest	7.4%	Southeastern	Berks	5.8%
	Lawrence	6.4%		Bucks	4.3%
	McKean	5.8%		Chester	3.4%
	Mercer	6.0%		Delaware	5.1%
	Venango	5.8%		Montgomery	4.0%
	Warren	5.4%			

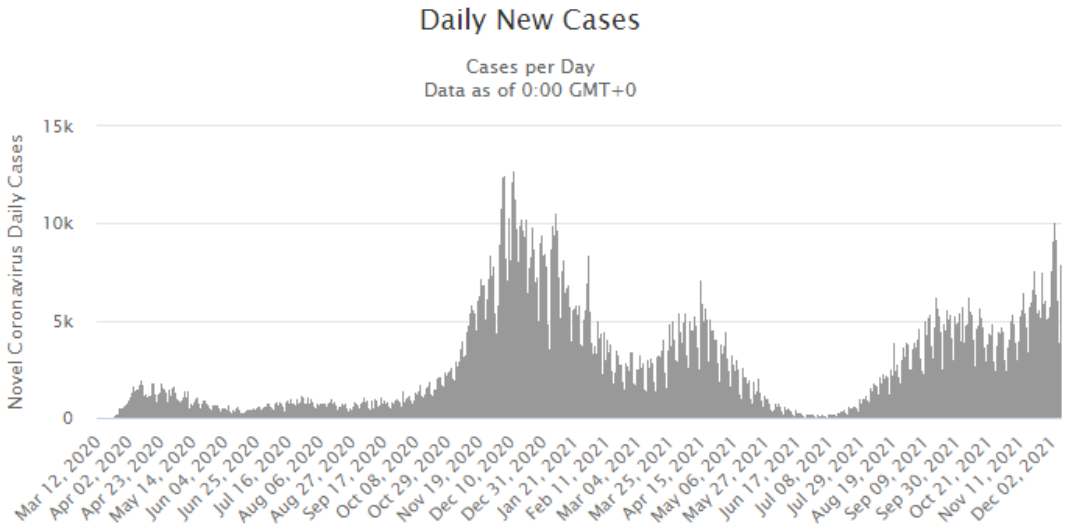
Q. In response to Mr. Packer's characterization of the Pandemic, are there any other sources of data, in addition to unemployment rates which attempt to quantify the effects of the COVID-19 Pandemic on Pennsylvania?

[12] Data in Table 1 was taken from: https://www.workstats.dli.pa.gov/Products/CountyProfiles/Pages/default.aspx

[13] https://www.bls.gov/eag/eag.pa.htm

A. Yes. The following charts are screenshots provided by Worldometer containing COVID-19 data for Pennsylvania.

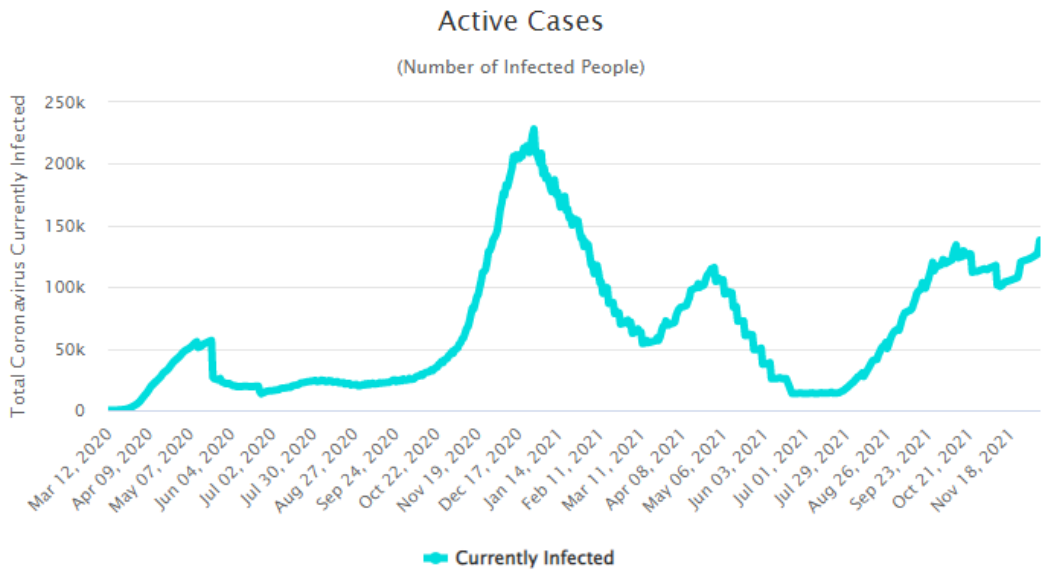
Daily New Cases in Pennsylvania



[14]

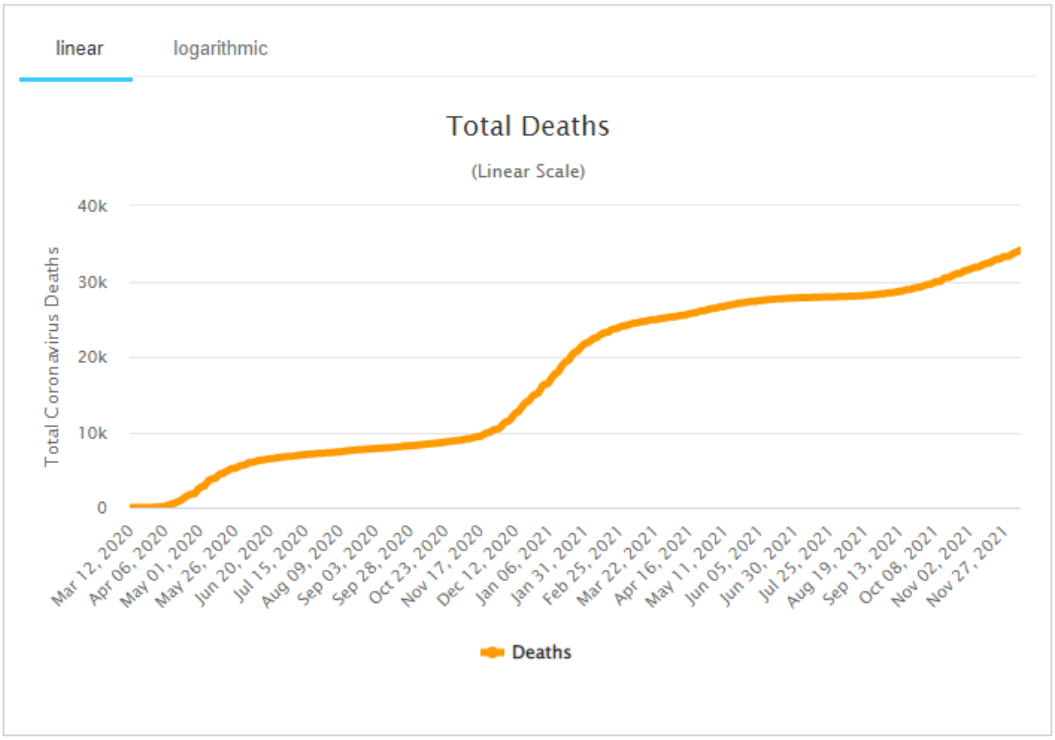
[14] https://www.worldometers.info/coronavirus/usa/pennsylvania/#graph-cases-daily

Active Cases in Pennsylvania



[15]

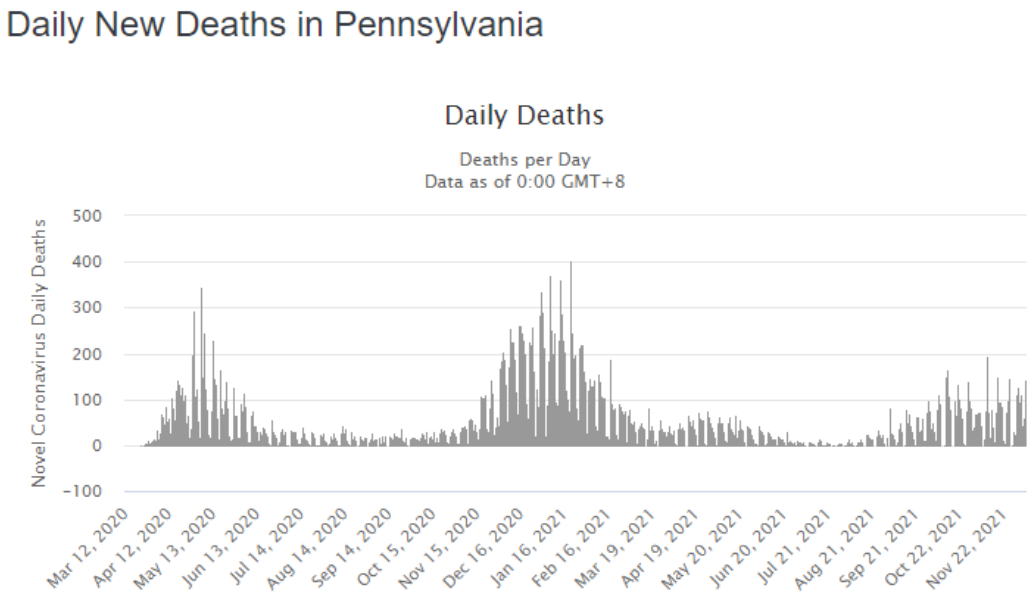
Total Coronavirus Deaths in Pennsylvania



[16]

[15] https://www.worldometers.info/coronavirus/usa/pennsylvania/#graph-cases-daily

[16] https://www.worldometers.info/coronavirus/usa/pennsylvania/#graph-cases-daily



[17]

Q. Have you come across any information in relation to Aqua PA's Service Territory specifically?

A. Yes. According to the latest reports, "Montour, **Northumberland, and Columbia Counties had the highest hospitalization rates in the country Wednesday**, according to New York Times data analysis, and many Western Pennsylvania counties were within the top few dozens." The article stated the number of hospitalized patients increased nearly 10% in a week and ICU beds are getting increasingly full. The article concludes by saying officials believe the exponential case spread is likely to continue.[18]

Q. Why is this data significant to this case?

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[17] https://www.worldometers.info/coronavirus/usa/pennsylvania/#graph-cases-daily

[18] PA COVID-19 Hospitalizations Are at Their Highest Level Since January, With Spikes in Central and Western Regions. The Philadelphia Inquirer (Dec. 8, 2021) https://www.inquirer.com/health/coronavirus/pa-covid-cases-hospitalizations-delta-omicron-20211208.html (last accessed on December 9, 2021) (emphasis added)

A. Northumberland and Columbia counties are both located in Aqua's service territory. In other words, the data that is being reported shows that Mr. Packer's characterization of the state of the COVID-19 Pandemic in Aqua's service territory is simply incorrect. Again, the data makes clear that portions of Aqua's service territory are experiencing the highest hospitalization numbers in the country for the COVID-19 Pandemic.

Q. What can you conclude from this data?

A. This data shows that nearly 2 years into the COVID-19 Pandemic, numbers of cases and deaths continue to rise in Pennsylvania. Impacts of the Pandemic continue to affect Pennsylvania residents and Aqua's service territory. Numbers continue to remain significantly high, and appear to be increasing, placing a burden on communities throughout the Commonwealth.

<u>Response to Aqua Statement 2-R, Erin M. Feeney regarding the Proposed Acquisition Adjustment</u>

Q. Turning now to Aqua witness Ms. Feeney, please summarize Ms. Feeney's rebuttal testimony regarding your direct testimony.

A. Ms. Feeney stated in her rebuttal testimony that Aqua's application to acquire the Borough of Phoenixville ("Borough") water system included sufficient evidence to satisfy Section 1327(a)(3). (Aqua Statement 2-R, p. 8 at 9-10). She believed the Commission has never interpreted Section 1327 to require all five subsections of Section 1327(a)(3) to be satisfied in order to obtain recovery of an acquisition adjustment. (Aqua Statement 2-R, p.5 at 20-22). She goes on to state her opinion that Aqua included sufficient evidence to satisfy Section 1329(a)(3) and concludes by stating that there is not any valid basis for my claims.

Q. Do you agree with Ms. Feeney that your direct testimony provides a basic argument and there is not any valid basis for your claims?

A. No. Aqua did not demonstrate at the time of the acquisition the Phoenixville system was not furnishing and maintaining adequate, efficient, safe and reliable service and facilities. The Borough planned to keep the assets acquired by Aqua, if the Commission granted its Petition that service outside its municipal boundaries should not be regulated, as stated in my direct testimony.[19] Furthermore, this was an acquisition of a portion of the Borough's system and not an abandonment of service by a troubled system. Counsel for OCA will address the legal argument raised by Ms. Feeney, regarding her statement that not all criteria in Section 1327 must be met.[20] I reviewed the language again and do not agree with her position. The criteria listed in Section 1327 (a) are not listed as alternative criteria. Therefore, Aqua's proposal for a positive acquisition adjustment should be rejected.

<u>Response to Aqua Statement 8-R, Christine Saball regarding Aqua's Proposed Federal Income Tax Adjustment</u>

Q. Please summarize Ms. Saball's rebuttal testimony regarding your direct testimony.

A. Ms. Saball stated in her rebuttal testimony that although she agrees no one can say with any certainty if/when an increase to the federal corporate income tax rate will take effect, a change in the Federal income tax rate will impact all utilities at the same time and such change may impact whether a utilities' existing rates are no longer "just and reasonable". (Aqua Statement 8-R, p. 9 at 10-14). She argued my testimony disregards the circumstances of each utility that must be taken into consideration in individual cases by

[19] OCA Statement 2, p. 13 at 9-11.
[20] Aqua Statement 2-R, p 5 at 19-23.

the Commission and states a generic order could not accurately adjust rates for all utilities. (Aqua Statement 8-R, p. 10 at 2-3). She further stated, without any supporting citations, that "the President and his administration has repeatedly referenced an increase in the [federal corporate income tax] rate as a critical part of his agenda." (Aqua St. 8-R, p. 10 at 9-10). Ms. Saball goes on to testify, however, that "I fully agree that no one can say with any certainty if/when an increase to the federal corporate income tax rate will take effect." (Aqua St. 8-R, p. 10 at 10-12).

Q. What is your response to Ms. Saball?

A. The Commission determines whether a utility's rates are "just and reasonable", not the utility. To the best of my knowledge, there is no pending legislation indicating an increase to the federal corporate income tax rate. Nevertheless, given the admitted uncertainty of if/when an increase would take place and anticipating additional provisions that may affect corporate federal income tax liabilities, there is sufficient flexibility within a tax change proceeding to address relevant circumstances that may be unique to specific utilities.

Q. What is your recommendation on Aqua's Federal Tax Adjustment Clause Proposal?

A. My recommendation is for the Commission to reject Aqua's Federal Tax Adjustment Clause Proposal for the reasons stated in both this testimony, and my Direct Testimony. The impact of any changes to the federal corporate income tax rate should be addressed by the Commission in a proceeding that includes all utilities.

Conclusion:

Q. Does this conclude your surrebuttal testimony at this time?

A. Yes, it does. However, I reserve the right to modify or supplement my testimony if necessary.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	Docket Nos. R-2021-3027385 (Water)
	v.	:	C-2021-3028466 (Water)
		:	R-2021-3027386 (WW)
	Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
	Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Morgan N. DeAngelo, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 2-SR, 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: December 14, 2021

Signature: Morgan N. DeAngelo
Morgan N. DeAngelo

*320948

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

RE:	Pennsylvania Public Utility Commission	:		
		:	Docket Nos.	R-2021-3027385
	v.	:		
		:		R-2021-3027386
	Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc.	:		

SURREBUTTAL TESTIMONY

OF

DAVID J. GARRETT

ON BEHALF OF

THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

December 14, 2021

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is David J. Garrett. My business address is 101 Park Avenue, Suite 1125, Oklahoma City, Oklahoma 73102.

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

A. I am the managing member of Resolve Utility Consulting, LLC. I am an independent consultant specializing in public utility regulation.

Q. Have you previously filed testimony in this proceeding?

A. Yes. I filed direct testimony in OCA Statement 3 on November 10, 2021, on behalf of the Pennsylvania Office of Consumer Advocate ("OCA") in response to the proposed cost of capital filed by Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc. (collectively "Aqua" or the "Company") in this proceeding. A summary of my qualifications is included in my direct testimony.

Q. What is the purpose of your surrebuttal testimony?

A. My surrebuttal testimony responds to the rebuttal testimony of Company witness Paul R. Moul.

Q. Did any of the rebuttal testimony you reviewed cause you to change your positions and recommendations as stated in your direct testimony?

A. No. To the extent I do not specifically address a statement made in the rebuttal testimony filed in this case, it should not constitute my agreement with such rebuttal testimony.

Q. In his rebuttal testimony, did Mr. Moul raise any new, significant issues related to your cost of equity and rate of return testimony and analysis?

A. No. In Mr. Moul's rebuttal testimony, it is clear that he disagrees with my opinions related to the City's cost of equity estimate, and my return on equity ("ROE") and capital structure recommendations. However, I do not believe he raised any new, significant issues regarding the same. Thus, in my surrebuttal testimony, I will not repeat all the arguments and points raised in my direct testimony; rather, I will reiterate a few important points in my response to Mr. Moul's rebuttal testimony.

Q. Please summarize your surrebuttal testimony.

A. In my surrebuttal testimony, I respond to several pertinent issues discussed in Mr. Moul's rebuttal testimony, including (1) capital structure; (2) the growth rate input to the Discounted Cash Flow ("DCF") Model; (3) the Capital Asset Pricing Model ("CAPM"); (4) the leverage adjustment; and (5) management performance.

II. CAPITAL STRUCTURE

Q. Please summarize Mr. Moul's rebuttal testimony regarding capital structure.

A. Mr. Moul disagrees with my capital structure proposal. He suggests that my capital structure "merely lowers the Company's revenue requirements."[1]

Q. What is your response to Mr. Moul's rebuttal testimony regarding capital structure?

A. First, Mr. Moul mischaracterizes my testimony by suggesting that my approach to capital structure is designed to achieve a particular outcome (i.e., a lower revenue requirement). Because Mr. Moul's positions regarding the ROE and capital structure result in an

[1] Rebuttal Testimony of Paul R. Moul, p. 8, lines 13-14.

unreasonably high cost of capital estimate, it is natural that reasonable adjustments to his positions will produce lower results. In light of the evidence presented in my testimony, my proposed debt ratio of 50% is quite reasonable. In fact, the average debt ratio of Mr. Moul's own proxy group is 50% based on 2020 data. It is important the Commission approve a capital structure that is reflective of one that might actually exist in a competitive environment. Using the capital structures of the publicly-traded proxy group (the same group used for the CAPM and DCF Model analysis) is a reasonable way to assess an appropriate capital structure for Aqua.

III. DCF GROWTH RATES

Q. Please summarize Mr. Moul's rebuttal testimony regarding the growth rate input to the DCF Model.

A. Mr. Moul's rebuttal testimony regarding the growth rate I used in my DCF model is difficult to reconcile. Mr. Moul correctly acknowledges that I used one of the same growth rates considered in his own DCF analyses. In other words, on this particular issue, I conducted my own DCF Model using one of Mr. Moul's growth rate assumptions. Despite this fact, Mr. Moul concludes that my DCF analysis should be dismissed and that the DCF growth rates I propose do not provide a reasonable input to the DCF Model.[2]

Q. Do you have a response to Mr. Moul's rebuttal testimony regarding the DCF growth rate?

A. Yes. As part of my DCF analysis presented in my direct testimony, I considered potential growth rates from several sources and discussed why it is prudent for U.S. gross domestic product ("GDP") to typically be a limiting factor on the long-term growth rate input to the

[2] Rebuttal Testimony of Paul R. Moul, p. 18, lines 10-24.

DCF Model. However, I also acknowledged in my testimony the potential unique growth opportunities of water utilities in the proxy group, and how those growth opportunities likely apply downward pressure on dividend yields. The growth rate I ultimately selected in my DCF Model is considered in Mr. Moul's own DCF Model. What my analysis demonstrates is that when reasonable inputs to the DCF Model are used, the resulting ROE is still only 8.0%, even if one of the Company's relatively high proposed growth rate assumptions is considered.

IV. CAPM ANALYSIS

Q. Please summarize Mr. Moul's rebuttal testimony regarding your CAPM results.

A. Mr. Moul claims that the results of my CAPM are "simply not credible" in part because of my "backward looking" yield on 30-year Treasury bonds.[3]

Q. Please summarize the inputs and results of your CAPM and how they differ from Mr. Moul's inputs and results.

A. The result of my CAPM is reasonable and credible. The CAPM is a Nobel Prize-winning financial model that has three inputs: (1) risk-free rate; (2) beta; and (3) the ERP. I will summarize and contrast the sources of these inputs between my CAPM and Mr. Moul's CAPM analysis.

1. Risk-free rate

Financial analysts use the yield on Treasury securities as a proxy for the risk-free rate. I used a recent 30-day average on the daily yields on 30-year Treasury bonds as a proxy for the risk-free rate in my CAPM. To be clear, this approach indicates the *current*

[3] Rebuttal Testimony of Paul R. Moul, p. 22, lines 18-26.

risk-free rate. Mr. Moul mischaracterizes my testimony by referring to this approach as "backward looking." In contrast, Mr. Moul relies on *projected* bond yields and goes so far to say that "the CAPM *mandates* using prospective 30-year Treasury bond yields, leverage adjusted betas, and size adjustment" in his rebuttal testimony.[4] Mr. Moul is incorrect. While the process of cost of equity estimation is a forward-looking concept, it does not require the use of prospective bond yields as a proxy for the risk-free rate. In my experience, both in the academic and regulatory environment, most analysts use the current yields on U.S. Treasury securities as a proxy for the risk-free rate. The analysts who use prospective bond yields for the risk free rate typically represent utility companies, and the prospective bond yields used in such analyses are inevitably higher than the current bond yields at that time. The inputs to the CAPM, including 20-year or 30-year bond yields and the equity risk premium, are sufficiently "forward-looking" without the use of prospective (i.e., higher) bond yields for the risk-free rate.

Further, I have reviewed dozens of utility ROE testimonies dating back more than 20 years. In nearly every one of those cases, the witness representing the utility relied on a forward-looking or projected Treasury bond yield for the risk-free rate, instead of relying on the current, *known* Treasury bond yield. In fact, I cannot recall a single instance in which the utility's projected bond yield was *lower* than the current bond yield. In other words, I cannot recall a single case in which a utility witness's prediction of the future did not, all else held constant, result in a higher cost of equity estimate in the present. This reliance on projected bond yields is misplaced, given that the projections often overstate

[4] Rebuttal Testimony of Paul R. Moul, pp. 3-4. (emphasis added).

the actual yields. After observing this trend of forecasted yields exceeding actual yields over many years without exception, it reinforces my opinion that it is preferable to use known (current) bond yields rather than unknown (future) bond yields.

2. Beta

For the beta input in my CAPM, I relied on the betas published by Value Line. In my experience, the vast majority of ROE witnesses in utility rate proceedings (representing both utilities and customers) rely on Value Line betas without further adjustment. In contrast, Mr. Moul takes the unusual approach of making an upward adjustment to Value Line's published betas, which causes a higher CAPM result.

3. ERP

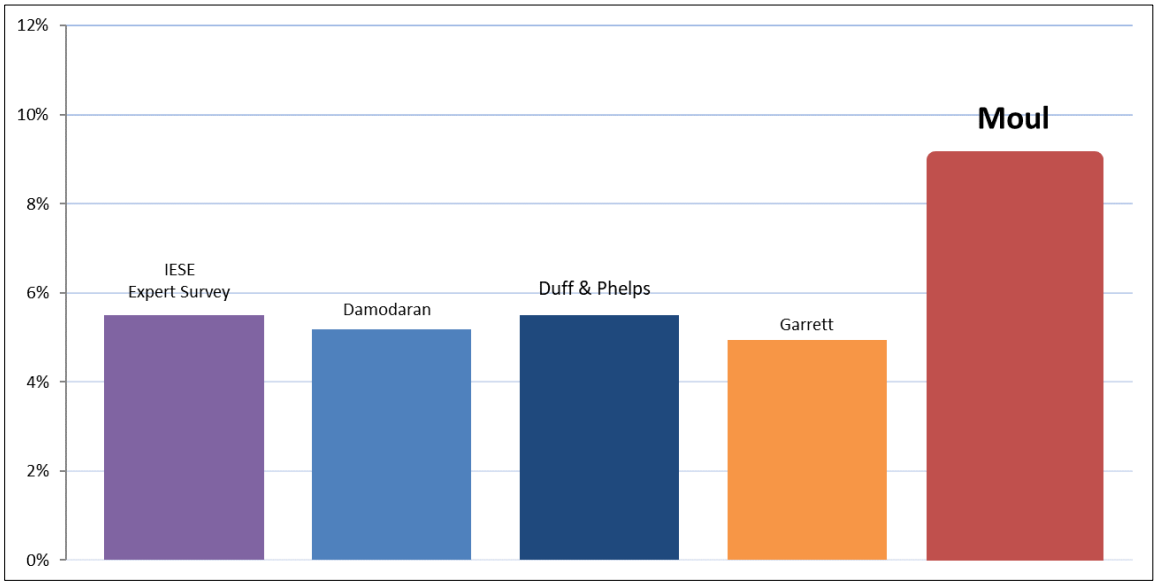
Mr. Moul criticized my approach to looking back 30 days to get an average yield on T-bonds for my current risk-free rate input and described it as "backward-looking."[5] However, Mr. Moul relies on data that predates the discovery of penicillin and bubble gum for his ERP estimate. Relying on data dating back nearly 100 years (1926) is not a reasonable approach in estimating the ERP.[6] As discussed in my direct testimony, there is substantial evidence showing that the current and forward-looking ERP is notably lower than the historical ERP (especially if one begins their historical ERP analyses before the Great Depression). In contrast to Mr. Moul's approach, I relied on a survey of thousands of unbiased experts in helping develop a reasonable estimate for the ERP. I also looked at the estimate published by Duff & Phelps, which is a respected, international corporate

[5] Rebuttal Testimony of Paul R. Moul, p. 25, lines 13-14.

[6] *See* AP Exhibit 4-A.

advising firm, and the estimate published by one of the world's leading experts on the ERP – Dr. Aswath Damodaran. The *highest* ERP from these sources is 5.5% (notably lower than Mr. Moul's 9.0% estimate). I used this 5.5% in my analysis.

Figure 1:
Equity Risk Premium Comparison



This figure demonstrates that Mr. Moul's ERP estimate is not in line with other reasonable, unbiased sources discussed in my direct testimony.

Q. What do you conclude about the results of your CAPM analyses as compared with Mr. Moul's results?

A. I used reasonable, objective figures for each of the three CAPM inputs. The current risk-free rate is known. It does not require a subjective estimate or adjustment. The betas used in my analysis are published by Value Line. To my knowledge, Value Line does not have any conflict of interest with either utilities or ratepayers that might affect their judgment. The ERP used in my analysis comes from a survey of thousands of unbiased experts. Based

on these inputs, the results of my CAPM are quite reasonable. That result indicates a CAPM cost of equity estimate of 6.4% for Aqua.

V. LEVERAGE ADJUSTMENT

Q. Please summarize Mr. Moul's rebuttal testimony regarding his leverage adjustment.

A. Mr. Moul asserts that I "never really refute" his leverage adjustment.[7]

Q. What is your response to Mr. Moul's rebuttal testimony regarding the leverage adjustment?

A. Mr. Moul's claim that I do not refute his leverage adjustment is incorrect. I spend several pages in my direct testimony refuting this unreasonable adjustment, and I perform a calculation that mathematically shows my disagreement with his adjustment and present my findings in an entire exhibit specifically created to refute Mr. Moul's leverage adjustment.[8]

VI. MANAGEMENT PERFORMANCE

Q. Please summarize Mr. Moul's rebuttal testimony regarding management performance as it relates to the return on equity.

A. Mr. Moul continues to assert that the performance of Aqua's management should be considered by the Commission when determining a fair authorized ROE.

Q. Do you agree with Mr. Moul's rebuttal testimony regarding management performance?

A. No, for the reasons stated in my direct testimony. Whether or not the Commission recognized Aqua's management performance in the past, in this case, Aqua has conducted

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[7] Rebuttal Testimony of Paul R. Moul, p. 18, line 4.

[8] Direct Testimony of David J. Garrett, pp. 35-38; *see also* Exhibit DJG-17.

no comparative analyses to determine if Aqua's management performance is any different than other regulated utilities (in or out of the proxy group). As such, there is no basis for awarding a rate of return higher than Aqua's estimated cost of equity. The unreasonableness of Mr. Moul's proposal is exacerbated by the fact that his base cost of equity estimates are already unreasonably high. Please see the direct and surrebuttal testimonies of OCA witnesses Roger Colton and Barbara Alexander for further discussion regarding Aqua's managerial performance.

Q. Does this conclude your surrebuttal testimony?

A. Yes.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, David J. Garrett, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 3-SR, 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: December 14, 2021 Signature: _____
*320949 David J. Garrett

Consultant Address: Resolve Utility Consulting, PLLC
101 Park Avenue
Suite 1125
Oklahoma City, OK 73102

OCA STATEMENT 4SR

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	**)**	
v.	**)**	**Docket No. R-2021-3027385**
Aqua Pennsylvania, Inc.	**)**	**Docket No. R-2021-3027386**
Aqua Pennsylvania Wastewater, Inc.	**)**	

SURREBUTTAL TESTIMONY

OF

GLENN A. WATKINS

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

DECEMBER 14, 2021

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Glenn A. Watkins. My business address is 6377 Mattawan Trail, Mechanicsville, Virginia 23116.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS CASE?

A. Yes. I pre-filed direct testimony in this proceeding on November 10, 2021, which was designated as OCA Statement 4, supplemental direct testimony on November 19, 2021, which was designated as OCA Statement 4 Supp, as well as rebuttal testimony on December 2, 2021, which was designed as OCA Statement 4R.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY IN THIS PROCEEDING?

A. The purpose of this testimony is to respond to the rebuttal testimonies of Company witnesses Packer and Heppenstall, I&E witness Kubas, and OSBA witness Kalcic as they relate to Act 11 subsidies to wastewater operations, respond to Ms. Heppenstall regarding customer charges, and respond to the rebuttal testimony of Company witness Feeney as it relates to negotiated water contract revenues.

Q. WHAT IS THE MAJOR DISAGREEMENT THAT COMPANY WITNESSES PACKER AND HEPPENSTALL HAVE WITH YOUR RECOMMENDED ACT 11 SHIFT OF REVENUES FROM THE COMPANY'S WASTEWATER OPERATIONS TO THE COMPANY'S WATER OPERATIONS?

A. Under Aqua's proposal, its water operations would subsidize its wastewater operations by $20.839 million. I recommend that this subsidy be reduced by $9.065 million such that water operations would subsidize wastewater operations by $11.774 million. As discussed in detail in my direct testimony, my recommended lower wastewater subsidy is the result of assigning larger increases to wastewater based on the revenue requirement associated with the acquisition premiums[1] that Aqua paid for

[1] Both Mr. Packer and Ms. Heppenstall claim that my characterization of "acquisition premiums" is not correct. Without debating over terminology, my definition of acquisition premium is the purchase price above net book value.

the five acquired systems at issue in this case.[2] Both Mr. Packer's and Ms. Heppenstall's biggest criticism concerning my recommended Act 11 shift of revenues is that I have violated the concept of gradualism.

Q. PLEASE RESPOND TO MR. PACKER'S AND MS. HEPPENSTALL'S CRITICISM THAT YOUR RECOMMENDATION VIOLATES THE CONCEPT OF GRADUALISM.

A. First, I would like to discuss the concept of gradualism as it relates to Aqua's proposals in this case. As noted in Table 3 of my direct testimony, on a collective basis, Aqua paid $75.9 million more than book value for the acquired systems which represented an acquisition premium of 80.7%. In this case, Aqua proposes that its shareholders be compensated for the cost of these premiums immediately in this rate case. To be clear, under Aqua's proposal, it is requesting the entire cost of providing service including a return of, and return on, the acquisition premiums paid for the acquired systems at perhaps the highest the rate of return I have seen in many years for a regulated utility.[3] In anything but a monopoly, such practices cannot nor will not exist. That is, in anything but a monopolistic situation, any price increases would be gradual over time such that shareholders would not recoup the total cost of providing service in the early years after the acquisition but make up revenue shortfalls in later years. However, under the ratemaking model used in this rate proceeding, all experts have been confronted with the dilemma of fairly and equitably assigning revenue responsibility across water and wastewater operations with the constraint that Aqua's shareholders are allowed a fair and reasonable rate of return on its investment (including the acquisition premiums it paid for the acquired systems). Toward this end, the benefits that the residents (Aqua wastewater customers) of the municipalities served by the acquired systems obtained by selling their wastewater systems largely above book value must be weighed against the prices they should now pay Aqua for wastewater service when considering the concept of rate gradualism. I note that even

[2] The five acquired wastewater systems are Limerick, East Bradford, Cheltenham, East Norriton, and New Garden.
[3] Aqua is proposing a rate of return on equity of 10.75%.

under my recommended rate increases to the customers of the five systems acquired under Fair Market Value, the acquired customers are not paying the full cost of service to serve them, thus under my recommendation there remains a $11.774 million subsidy by water customers.

As an analogy, suppose I purchased my home many years ago for $100,000 and still had a small mortgage on the home. I decided to sell my home at fair market value for $200,000 and rent it back from the investor. In the concept of gradualism, it would not be reasonable for me to propose that my new rental payment be based only slightly higher than my original mortgage, and at the same time, also ask all of the other investor's renters to subsidize my monthly rental payment. Clearly, as a result of my decision to sell my house at fair market value, I would be expected to rent it back at a rent that reflected the fair market value that is much higher than my original mortgage.

Q. IN TERMS OF EQUITY AND FAIRNESS, ARE THERE OTHER POINTS TO CONSIDER IN THIS CASE?

A. Yes. As noted in my direct and rebuttal testimonies, the vast majority of Aqua's water customers do not rely upon the Company for wastewater services. However, under the proposals in this case, these customers are being asked to subsidize Aqua's wastewater operations for which they receive no benefits whatsoever and are paying wastewater bills to other entities or are incurring costs for on-lot wastewater. In this regard, it was my objective to reasonably minimize the subsidies that Aqua's water customers are providing to Aqua's wastewater customers, and at the same time, fairly apportion revenues to wastewater customers.

Q. CAN YOU PROVIDE A COMPARISON OF AQUA'S CALCULATED REVENUE REQUIREMENT FOR EACH WASTEWATER SYSTEM TO AQUA'S AND YOUR PROPOSED WASTEWATER SUBSIDIES?

A. Yes. The following table provides the revenue requirement (cost of service) for each wastewater system, Aqua's and OCA's proposed revenues, as well as the resulting subsidy that each system will receive under Aqua's and OCA's recommendations:

TABLE 1

Comparison of Aqua & OCA Recommended Wastewater Subsidies[4]

($000)

	Revenue Requirement (Cost of Service)	Proposed Revenues		Subsidy		Subsidy %	
		Aqua	OCA	Aqua	OCA	Aqua	OCA
Base Operations	$35,938	$22,485	$25,959	$13,453	$9,979	37%	28%
Limerick	$9,926	$6,947	$9,166	$2,978	$760	30%	8%
E. Bradford	$1,831	$1,373	$1,848	$458	($16)	25%	-1%
Cheltenham	$10,316	$9,800	$10,336	$516	($20)	5%	0%
E. Norriton	$5,831	$4,082	$5,711	$1,749	$120	30%	2%
New Garden	$5,623	$3,935	$4,668	$1,687	$955	30%	17%
Total Wastewater	$69,465	$48,623	$57,688	$20,842	$11,777	30%	17%

As can be seen in the table above, my proposed wastewater revenue allocations reduce the subsidies proposed by Aqua, which in turn, reduced the subsidies paid by Aqua's water customers.

Q. NOTWITHSTANDING THE MAGNITUDE OF THE DIFFERENCES BETWEEN YOUR ACT 11 REVENUE SHIFT TO THOSE RECOMMENDED BY MS. HEPPENSTALL, DOES SHE HAVE DISAGREEMENTS WITH YOUR ALLOCATION OF ACT 11 REVENUES TO WATER OPERATIONS?

A. Yes. Ms. Heppenstall is of the opinion that the "proper" method to allocate Act 11 revenue subsidies is to calculate the difference between proposed revenues and cost of service by class for wastewater and then allocate that difference to the same classes in the water cost of service. Furthermore, Ms. Heppenstall claims that I gave undue credit in my water Act 11 shift to classes that receive little or no original allocation of the Act 11 subsidy. Specifically, she claims that I reduced the Industrial class's water revenues by $528.00 too much (0.0027%) and reduced Public Authority water revenues by $93,398 too much (1.06%).

Q. PLEASE RESPOND TO MS. HEPPENSTALL'S CRITICISMS OF YOUR WATER REVENUE ALLOCATIONS.

[4] Amounts reflect Aqua's proposed revenue requirement.

A. As discussed in my rebuttal testimony to Mr. Kalcic, this case involves a multitude of complexities and constraints including: the policy to gradually move zone rates to a state-wide rate; the statutory Public Fire water subsidy requirement; the impact of Act 11 revenue shifting between water and wastewater operations; and, differences in the mix of customer classes across various division and operating areas. Ms. Heppenstall's concern over miniscule differences in class allocations are only one of the concerns and constraints that must be considered in this case. However, I would not object to increasing the Industrial water revenue increase by $528.00 nor would I object to increasing the Public Authority revenue increase by $93,398. This minor, additional revenue shifting would then reduce the revenues for Residential and Commercial water customers.

Q. PLEASE PROVIDE A SUMMARY OF I&E WITNESS KUBAS' REBUTTAL TO YOUR TESTIMONY AS IT CONCERNS ACT 11 REVENUE SUBSIDIES.

A. By and large, Mr. Kubas does not object to my proposed wastewater revenue allocations across the various systems but rejects OSBA witness Kalcic's recommendations. The table below provides a summary comparison of I&E's, OCA's and OSBA's recommendations along with Mr. Kubas' response to Mr. Kalcic's and my recommendations:

TABLE 2
Aqua PA
Comparison of Wastewater Recommended Increases
($000)

	Aqua	OCA	I&E	OSBA	Kubas Rebuttal Recommendation
Legacy	$3,473	$6,947	$6,049	$4,635	Does not oppose OCA, rejects OSBA
Limerick	$2,969	$5,187	$2,982	$2,969	Does not oppose OCA, rejects OSBA
E. Bradford	$358	$833	$611	$358	Does not oppose OCA, rejects OSBA
Cheltenham	$2,541	$3,078	$4,084	$2,541	Rejects OCA and OSBA
E. Norriton	$1,158	$2,788	$1,528	$1,158	Does not oppose OCA, rejects OSBA
New Garden	$1,064	$1,796	$1,384	$2,142	Does not oppose OCA, no comment on OSBA
Total	$11,564	$20,629	$16,639	$13,804	

Q. DO YOU HAVE ANY DISAGREEMENTS WITH MR. KUBAS' REBUTTAL POSITIONS?

A. Yes. With respect to Cheltenham, Mr. Kubas recommends $1.006 million more of an increase than I do ($4.084 million minus $3.078 million). However, if Mr. Kubas' recommendation is adopted, Cheltenham's resulting rates (at the Company's revenue requirement) would actually be higher than its cost of service.[5] As a result, I cannot agree with Mr. Kubas' recommended revenue increase for Cheltenham.

Q. DOES OSBA WITNESS KALCIC DISAGREE WITH YOUR OVERALL WASTEWATER REVENUE ALLOCATION?

A. On a total basis, it is my understanding that Mr. Kalcic does not oppose my wastewater revenue allocation, however, he does disagree with how the overall Act 11 revenue subsidy should be assigned to individual classes. Specifically, on page 7 of his rebuttal testimony, Mr. Kalcic states that he would not oppose a proportional scale-back to the OCA's proposed wastewater increases since such increases are significantly greater than those proposed by the OSBA. However, when any authorized wastewater Act 11 revenues are shifted to water operations, Mr. Kalcic is of the opinion that this subsidy should be recovered on a revenue neutral basis by customer class.[6]

Q. DO YOU AGREE WITH MR. KALCIC'S RECOMMENDATION THAT ACT 11 REVENUES SHOULD NECESSARILY BE SHIFTED ON A REVENUE BASIS BY CLASS?

A. No. In his rebuttal testimony, Mr. Kalcic reiterated his recommendation set forth in his direct testimony. As such, I addressed my disagreements with Mr. Kalcic in my rebuttal testimony.

Q. DOES MS. HEPPENSTALL DISAGREE WITH YOUR CALCULATION OF CUSTOMER COSTS THAT SHOULD BE CONSIDERED IN EVALUATING FIXED MONTHLY CUSTOMER CHARGES?

---

[5] Cheltenham's revenue requirement (cost of service) is $10.316 million. Under Mr. Kubas' proposal, Cheltenham's revenues would be increased to $11.342 million ($10.336 million OCA plus $1.006 million additional I&E).

[6] Kalcic rebuttal, page 4, lines 4-6.

A. Yes. On page 9 of her rebuttal testimony, Ms. Heppenstall claims that numerous overhead costs are necessary for the support of customer facilities and customer accounting and should be considered direct costs. There is no plausible way that these overhead costs are "direct costs" required to connect and maintain a customer's account. Indeed, they are simply overhead costs incurred by the Company in rendering service to its customers.

Q. DOES MS. HEPPENSTALL ASSERT THAT THE OVERHEAD COSTS SHE HAS INCLUDED IN HER CUSTOMER COST ANALYSIS HAVE BEEN PREVIOUSLY APPROVED BY THE COMMISSION?

A. Yes. Ms. Heppenstall incorrectly asserts that her approach was approved by the Commission in a 2003 case involving Aqua (formerly Pennsylvania Suburban Water Company) in Docket No. R-00038805. However, Ms. Heppenstall is factually incorrect. Specifically, and with regard to the Aqua case in question, the Commission found as follows:

> First, the ALJ correctly found that the cost of customer equipment, and also of meters and service line maintenance, is properly includable in a cost study . . .
>
> Second, we find that it is reasonable and proper to include allocated portions of indirect costs, such as employee benefits, local taxes and other general and administrative costs, in a cost study. We caution that these are costs which may considered for inclusion in the customer charge, but such claims are subject to scrutiny on a case-by-case basis. [Order, at page 72]

As clearly indicated in my direct testimony Schedule GAW-7, where I calculated those costs that should be considered in evaluating customer charges, I have included several indirect costs including payroll taxes, insurance, employee benefits, and other administrative and general costs.

Q. IS THERE ACADEMIC SUPPORT FOR NOT CONSIDERING A HOST OF INDIRECT AND OVERHEAD COSTS IN EVALUATING FIXED MONTHLY CUSTOMER CHARGES?

A. Yes. In his well-known treatise Principles of Public Utility Rates, Professor James C. Bonbright states:

> But fully-distributed cost analysts dare not avail themselves of this solution, since they are the prisoners of their own assumption that "the sum of the parts equals the whole." They are therefore under impelling pressure to fudge their cost apportionments by using the category of customers costs as a dumping ground for costs that they cannot plausibly impute to any of their other cost categories. (Second Edition, page 492)

Q. DOES AQUA AGREE WITH YOUR REVENUE ADJUSTMENT RELATING TO NEGOTIATED CONTRACTS?

A. To some extent, yes. However, Company witness Feeney disagrees with the calculations I used to develop my contract revenue adjustment.

Q. PLEASE EXPLAIN.

A. While Ms. Feeney agrees that some adjustment to the Company's original filing is appropriate, she disagrees with two aspects of my calculations.[7] First, Ms. Feeney disagrees with the inflation factors that I utilized and second, she notes that I incorrectly applied inflation factors to the customer charge component of these customers' contractual rates; i.e., these customer charges are at the full tariff rates. Ms. Feeney then recalculated the usage rates for seven of the negotiated rate contracts in question and supplied these rates to Ms. Heppenstall for her revenue calculations.

With respect to the presentation I made versus Ms. Heppenstall's revised revenues contained in her rebuttal testimony, I note that my adjustment is at current rates while Ms. Heppenstall revised her revenues at proposed rates. Mathematically, either way is acceptable when new rates are ultimately designed. The following represents Ms. Heppenstall's revised contract revenues contained in her rebuttal testimony:

[7] Feeney Rebuttal pages 27-28.

TABLE 3

	Aqua Original Filing	Aqua Rebuttal Filing	Change
Contract Revenue	$4,909,195	$5,025,231	$116,036

Q. DO YOU AGREE WITH MS. FEENEY'S REBUTTAL TESTIMONY AS IT RELATES TO HER DISAGREEMENTS WITH YOUR ADJUSTMENT TO NEGOTIATED RATE CONTRACTS?

A. I generally agree with Ms. Feeney as it relates to the escalation of customer charges.[8] As such, I have revised my contract rate revenues that will be discussed later in my testimony. I disagree with Ms. Feeney's rebuttal testimony as it concerns the escalation of usage rates for the seven negotiated rate contract customers.

Q. PLEASE EXPLAIN YOUR DISAGREEMENT WITH MS. FEENEY'S ADJUSTMENT TO THE NEGOTIATED CONTRACT USAGE CHARGES SET FORTH ON PAGE 28 OF HER REBUTTAL TESTIMONY.

A. First, it must be remembered that the Company's rate application is based on a fully projected future test year ending March 31, 2023. This test year includes forecasted levels of rate base and expenses. As such, it is appropriate to also forecast the level of rates and revenues as of March 31, 2023. The rates and revenues included in Ms. Heppenstall's Exhibit 5-A, Part II reflect those contract rates that were in effect as of March 31, 2021.[9] Therefore, since each of the contracts in question have an annual escalation provision, it is appropriate to state the level of these contract rates and revenues as of March 31, 2023; i.e., the fully projected future test year. In my Highly Confidential Schedule GAW-9, I provided the details of my escalation rates wherein I utilized the average of the U.S. Office of Management and Budget's and the Federal Reserve's forecasted inflation rates for 2021, 2022, and 2023. Ms. Feeney

[8] One of the seven contracts does have an escalation clause for the fixed monthly charge while the other six do not.
[9] See Aqua Exhibit 5-A, Part II, Schedule 5, pages 20-23 and Schedule 6, page 3.

utilized considerably lower forecasted inflation rates, however, she does not mention or explain the source of her forecasted inflation nor how she developed her forecasted inflation rates.

Q. SO THAT IT IS CLEAR, WHAT INFLATION DID YOU UTILIZE IN YOUR HIGHLY CONFIDENTIAL SCHEDULE GAW-9?

A. The following table provides the details of the inflation rates I used in my analysis:

TABLE 4

	Forecasted Inflation Change In Consumer Price Index ("CPI")		
Year	Office of Mgmt. & Budget	Federal Reserve	Average
2021	4.80%	4.20%	4.50%
2022	2.50%	2.20%	2.35%
2023	2.30%	2.20%	2.25%

Q. HAVE YOU EVALUATED THE ACCURACY OR REASONABLENESS OF THE FORECASTED INFLATION SHOWN ABOVE?

A. Yes. My Schedule GAW-1SR provides the actual inflation rates through October 2021. As indicated in this Schedule, the annual rate of inflation through October 2021 has been 6.2% (October 2020 – October 2021). For the ten months ending October 2021, the CPI has increased by 5.5%. As a result, it is apparent that both the Office of Management & Budget and Federal Reserve have underestimated the inflation that will occur in 2021.

Q. ARE THE ESCALATION PROVISIONS IN EACH OF THE SEVEN CONTRACTS TIED TO CHANGES IN THE CPI?

A. Yes.

Q. EARLIER YOU INDICATED THAT YOU HAVE REVISED YOUR NEGOTIATED CONTRACT REVENUE ADJUSTMENT TO CORRECT FOR THE FACT THAT ALL BUT ONE OF THE CONTRACTS IN QUESTION DO NOT HAVE AN ESCALATION PROVISION FOR THE FIXED MONTHLY CHARGE RATE COMPONENT. PLEASE PROVIDE YOUR REVISED NEGOTIATED CONTRACT REVENUE ADJUSTMENT.

A. My original revenue adjustment of $301,307 should be revised to $236,777. The details supporting my revised negotiated contract revenues are provided in my Highly Confidential Schedule GAW-2SR.

Q. DOES THIS COMPLETE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

117th Congress, 1st Session

Economic Indicators

NOVEMBER 2021

(Includes data available as of December 7, 2021)

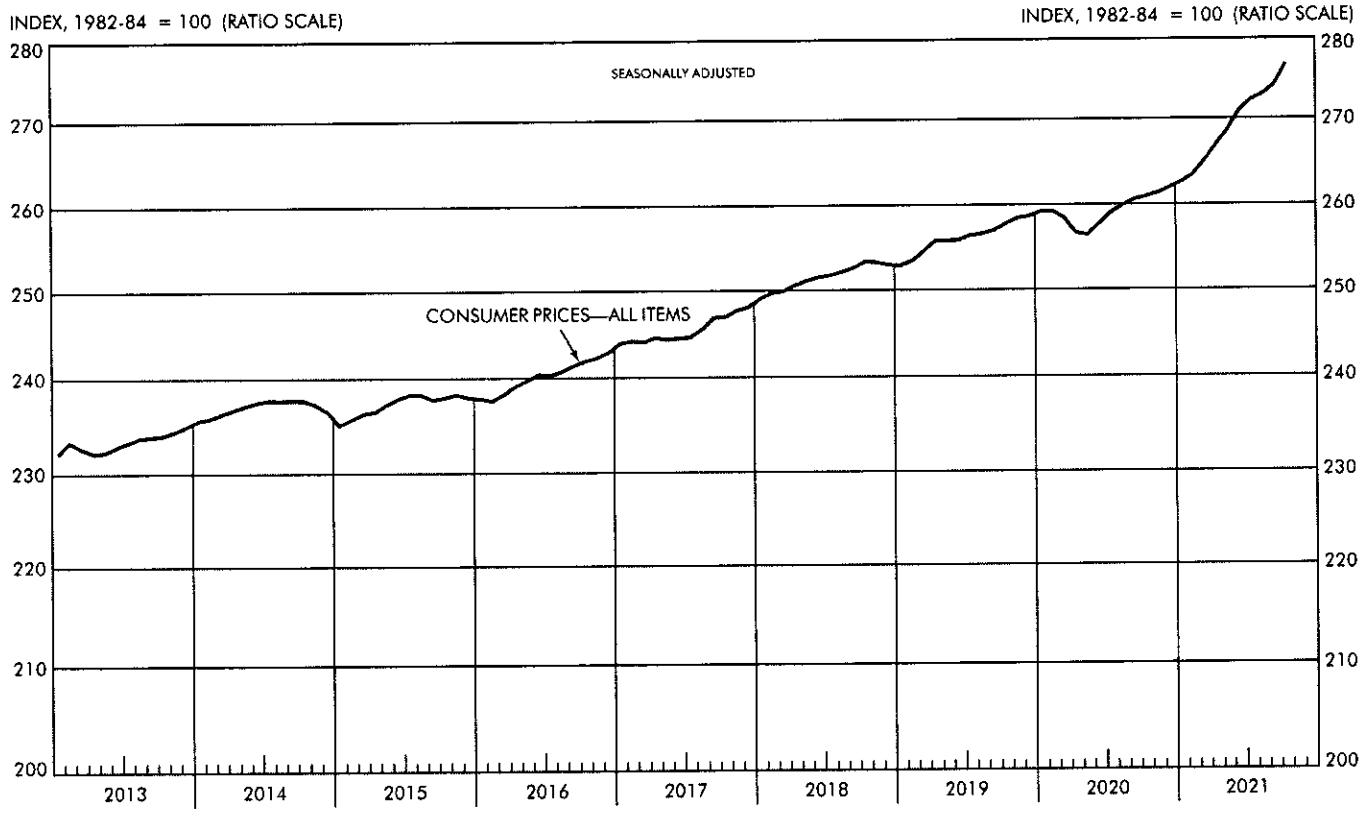
Prepared for the Joint Economic Committee by the Council of Economic Advisers

UNITED STATES
GOVERNMENT PUBLISHING OFFICE
WASHINGTON : 2021

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

Consumer Prices—All Urban Consumers

In October, the consumer price index for all urban consumers rose 0.9 percent; it rose 0.8 percent before seasonal adjustment. The index rose 6.2 percent from its year-earlier level.



SOURCE: DEPARTMENT OF LABOR

COUNCIL OF ECONOMIC ADVISERS

[1982–84=100, except as noted; monthly data seasonally adjusted, except as noted by NSA]

Period	All items		All items less food and energy					Food			Energy		C-CPI-U (Dec. 1999=100, NSA)[3]
	Not seasonally adjusted (NSA)	Seasonally adjusted	Total[1]	Shelter	Medical care[2]	Apparel	New vehicles	Total[1]	At home	Away from home	Total[1, 2]	Gasoline	
Rel. imp.[4]	*100.0*	.....	*78.701*	*32.576*	*8.520*	*2.727*	*3.834*	*13.977*	*7.716*	*6.261*	*7.322*	*3.830*	.....
2011	224.939	.....	225.008	251.646	400.258	122.111	141.883	227.842	226.201	231.401	243.909	301.694	129.453
2012	229.594	.....	229.755	257.083	414.924	126.265	144.232	233.777	231.774	237.986	246.080	311.470	131.976
2013	232.957	.....	233.806	263.056	425.134	127.411	145.783	237.037	233.869	243.068	244.409	302.577	.....
2014	236.736	.....	237.897	270.513	435.292	127.514	146.275	242.725	239.456	248.981	243.583	290.889	.....
2015	237.017	.....	242.247	278.803	446.752	125.903	147.135	247.235	242.250	256.101	202.895	212.007	.....
2016	240.007	.....	247.602	288.230	463.675	126.045	147.358	247.931	239.065	262.695	189.535	187.602	.....
2017	245.120	.....	252.169	297.803	475.322	125.612	146.992	250.065	238.589	268.826	204.540	211.770	.....
2018	251.107	.....	257.565	307.663	484.707	125.654	146.287	253.558	239.661	275.893	219.941	240.599	.....
2019	255.657	.....	263.211	318.053	498.413	124.052	146.834	258.316	241.775	284.410	215.294	232.003	.....
2020	258.811	.....	267.693	325.886	518.876	118.079	147.600	267.219	250.233	293.944	196.949	194.130	.....
2020: Oct[r]	260.388	260.462	269.350	327.360	521.370	115.757	148.858	269.833	251.945	297.893	197.157	193.213	146.382
Nov[r]	260.229	260.927	269.819	327.805	520.401	116.528	148.834	269.746	251.551	298.253	198.576	194.136	146.242
Dec[r]	260.474	261.560	269.940	328.210	519.664	117.577	149.385	270.656	252.324	299.369	203.716	204.217	146.408
2021: Jan[r]	261.582	262.231	270.025	328.483	521.652	120.178	148.611	270.880	252.007	300.382	210.822	219.338	147.054
Feb[r]	263.014	263.161	270.299	329.028	522.978	119.287	148.587	271.327	252.656	300.540	218.946	233.399	147.877
Mar[r]	264.877	264.793	271.214	330.019	523.668	118.949	148.550	271.632	252.927	300.897	229.886	254.642	148.918
Apr[r]	267.054	266.832	273.700	331.339	524.002	119.335	149.267	272.658	254.029	301.819	229.658	251.181	150.150
May[r]	269.195	268.551	275.718	332.315	523.594	120.793	151.693	273.866	254.931	303.481	229.630	249.370	151.334
June[r]	271.696	270.981	278.140	333.945	523.058	121.636	154.680	275.993	257.052	305.634	232.995	255.652	152.649
July[r]	273.003	272.265	279.054	335.381	524.431	121.687	157.340	277.985	258.782	308.023	236.796	261.881	153.352
Aug[r]	273.567	273.012	279.338	335.921	525.724	122.142	159.267	279.084	259.739	309.336	241.474	269.156	153.643
Sept[r]	274.310	274.138	280.017	337.274	525.585	120.779	161.330	281.668	262.969	310.996	244.565	272.520	154.076
Oct	276.589	276.724	281.695	338.813	528.221	120.780	163.517	284.225	265.512	313.592	256.227	289.131	155.317

[1] Includes other items not shown separately.
[2] Commodities and services.
[3] Chained consumer price index (C-CPI-U) reflects the effect of substitution that consumers make across item categories in response to changes in relative prices.
[4] Relative importance, September 2021.

Source: Department of Labor (Bureau of Labor Statistics).

Changes in Producer Prices

[Percent change from preceding period; monthly data seasonally adjusted, except as noted by NSA]

Period	Total final demand [1]	Final demand goods: Total	Final demand goods: Foods	Final demand goods: Energy	Final demand goods: Less food and energy	Final demand services: Total	Final demand services: Trade	Final demand services: Transportation and warehousing	Final demand services: Other	Final demand less foods, energy, and trade	Processed goods for intermediate demand: Total	Processed goods for intermediate demand: Less food and energy	Unprocessed goods for intermediate demand: Total	Unprocessed goods for intermediate demand: Nonfood materials less energy	Services for intermediate demand	Change from year earlier (NSA): Total final demand	Change from year earlier (NSA): Final demand goods	Change from year earlier (NSA): Final demand services
	Change, December to December, NSA																	
2011	3.2	4.7	5.7	9.2	3.1	2.3	2.3	6.7	1.8	.....	5.7	3.8	6.6	2.4	2.0	3.8	6.9	2.1
2012	1.9	1.4	4.1	−1.3	1.4	2.2	3.8	2.7	1.4	.....	.4	.6	1.4	−1.6	2.9	1.9	1.6	1.9
2013	1.2	.8	−.8	.9	1.3	1.3	−.4	2.0	2.0	.....	.1	.7	−1.9	−5.6	1.0	1.3	.8	1.6
2014	.9	−1.2	4.4	−13.2	1.1	2.1	4.0	.8	1.4	1.3	−2.6	−.1	−8.7	−5.3	1.8	1.6	1.2	1.8
2015	−1.1	−3.8	−5.2	−16.4	−.1	.2	.0	−3.5	.8	.3	−6.6	−3.8	−25.3	−18.5	.5	−.9	−4.3	.9
2016	1.7	1.9	−1.6	6.3	1.7	1.6	1.0	1.1	2.0	1.8	1.8	1.6	13.0	13.7	2.6	.5	−1.4	1.4
2017	2.5	3.5	2.0	10.1	2.2	2.1	1.8	2.3	2.3	2.3	5.0	3.6	5.0	8.5	2.9	2.4	3.3	1.8
2018	2.6	1.6	2.8	−3.1	2.6	3.0	3.1	6.5	2.6	2.8	2.8	3.5	3.7	2.9	3.1	2.8	3.4	2.6
2019	1.4	1.0	1.2	2.4	.6	1.4	.8	2.2	1.8	1.5	−1.7	−1.8	−7.3	−5.0	1.7	1.7	.4	2.2
2020	.8	.0	−.2	−6.8	1.7	1.3	1.9	−5.9	1.7	1.3	1.5	2.3	1.3	20.5	2.1	.2	−1.5	.9
	Change, month to month																	
2020: Oct	0.6	0.5	2.1	0.5	.0	0.7	1.5	1.1	0.1	0.2	0.9	0.3	1.3	0.3	0.7	.6	−1.0	1.3
Nov	.0	.4	.2	1.7	.3	−.2	−.7	−.5	.2	.2	.9	.2	6.3	2.8	.0	.8	−.8	1.6
Dec	.3	.9	−1.4	4.9	.5	.0	−.7	−.2	.4	.4	1.4	1.4	2.1	5.3	.7	.8	.0	1.3
2021: Jan	1.2	1.6	1.6	5.1	.8	1.0	.8	.7	1.2	1.0	1.8	1.8	5.3	8.6	1.1	1.6	1.3	1.8
Feb	.7	1.6	1.4	6.2	.5	.3	.2	.8	.2	.4	2.9	2.0	11.9	−.6	.3	3.0	3.5	2.6
Mar	.8	1.5	.6	5.0	.8	.3	.2	1.4	.4	.6	3.5	2.6	−4.2	1.9	.6	4.1	7.0	2.9
Apr	1.0	.7	1.8	−1.2	1.0	1.2	2.3	3.6	.4	.8	1.9	3.0	2.0	2.2	1.3	6.5	10.9	4.5
May	.9	1.5	2.7	1.2	1.1	.6	1.7	.2	.2	.5	2.9	2.7	7.2	8.9	.6	7.0	11.1	5.1
June r	.9	1.2	.8	2.9	1.0	.6	.9	1.6	.3	.6	1.8	2.0	1.8	.5	1.2	7.6	11.9	5.5
July r	.7	.5	−2.1	1.9	.8	.8	.8	2.9	.6	.9	1.4	1.3	2.2	.5	.4	7.8	11.9	5.8
Aug	.7	1.0	2.9	.4	.6	.7	1.5	2.8	.1	.3	1.0	1.3	1.0	.0	.3	8.3	12.6	6.4
Sept	.5	1.3	2.0	2.8	.6	.2	.9	−4.0	.2	.1	1.3	1.1	2.4	−3.5	.5	8.6	13.3	6.4
Oct	.6	1.2	−.1	4.8	.5	.2	.4	1.7	−.1	.4	2.1	1.1	8.4	1.1	.2	8.6	14.2	5.9

[1] Includes final demand construction, not shown separately.

Source: Department of Labor (Bureau of Labor Statistics).

Changes in Consumer Prices—All Urban Consumers

[Percent change from preceding period; monthly data seasonally adjusted, except as noted by NSA]

Period	All items [1]	All items less food and energy: Total [1]	All items less food and energy: Shelter	All items less food and energy: Medical care [2]	All items less food and energy: Apparel	All items less food and energy: New vehicles	Food: Total [1]	Food: At home	Food: Away from home	Energy: Total [1, 2]	Energy: Gasoline	C-CPI-U (NSA) [3]	Addendum: All items, percent change (annual rate): From previous quarter [4]	From 3 months earlier	From 6 months earlier	From year earlier (NSA)
	Change, December to December, NSA															
2011	3.0	2.2	1.9	3.5	4.6	3.2	4.7	6.0	2.9	6.6	9.9	2.9	.....	.....	.....	3.2
2012	1.7	1.9	2.2	3.2	1.8	1.6	1.8	1.3	2.5	.5	1.7	1.5	.....	.....	.....	2.1
2013	1.5	1.7	2.5	2.0	.6	.4	1.1	.4	2.1	.5	−1.0	1.3	.....	.....	.....	1.5
2014	.8	1.6	2.9	3.0	−2.0	.5	3.4	3.7	3.0	−10.6	−21.0	.5	.....	.....	.....	1.6
2015	.7	2.1	3.2	2.6	−.9	.2	.8	−.4	2.6	−12.6	−19.7	.4	.....	.....	.....	.1
2016	2.1	2.2	3.6	4.1	−.1	.3	−.2	−2.0	2.3	5.4	9.1	1.8	.....	.....	.....	1.3
2017	2.1	1.8	3.2	1.8	−1.6	−.5	1.6	.9	2.5	6.9	10.7	1.7	.....	.....	.....	2.1
2018	1.9	2.2	3.2	2.0	−.1	−.3	1.6	.6	2.8	−.3	−2.1	1.5	.....	.....	.....	2.4
2019	2.3	2.3	3.2	4.6	−1.2	.1	1.8	.7	3.1	3.4	7.9	1.8	.....	.....	.....	1.8
2020	1.4	1.6	1.8	1.8	−3.9	2.0	3.9	3.9	3.9	−7.0	−15.2	1.5	.....	.....	.....	1.2
	Change, month to month															
2020: Oct	0.1	0.1	0.1	−0.4	−0.9	0.3	0.2	0.1	0.3	0.6	0.7	0.0	.....	2.9	3.4	1.2
Nov	.2	.2	.1	−.2	.7	.0	.0	−.2	.1	.7	.5	−.1	.....	2.2	3.9	1.2
Dec	.2	.0	.1	−.1	.9	.4	.3	.3	.4	2.6	5.2	.1	2.4	2.2	3.4	1.4
2021: Jan	.3	.0	.1	.4	2.2	−.5	.1	−.1	.3	3.5	7.4	.4	.....	2.7	2.8	1.4
Feb	.4	.1	.2	.3	−.7	.0	.2	.3	.1	3.9	6.4	.6	.....	3.5	2.8	1.7
Mar	.6	.3	.3	.1	−.3	.0	.1	.1	.1	5.0	9.1	.7	3.7	5.0	3.6	2.6
Apr	.8	.9	.4	.1	.3	.5	.4	.4	.3	−.1	−1.4	.8	.....	7.2	5.0	4.2
May	.6	.7	.3	−.1	1.2	1.6	.4	.4	.6	.0	−.7	.8	.....	8.4	5.9	5.0
June	.9	.9	.5	−.1	.7	2.0	.8	.8	.7	1.5	2.5	.9	8.4	9.7	7.3	5.4
July	.5	.3	.4	.3	.0	1.7	.7	.7	.8	1.6	2.4	.5	.....	8.4	7.8	5.4
Aug	.3	.1	.2	.2	.4	1.2	.4	.4	.4	2.0	2.8	.2	.....	6.8	7.6	5.3
Sept	.4	.2	.4	.0	−1.1	1.3	.9	1.2	.5	1.3	1.2	.3	6.6	4.7	7.2	5.4
Oct	.9	.6	.5	.5	.0	1.4	.9	1.0	.8	4.8	6.1	.8	.....	6.7	7.6	6.2

[1] Includes other items not shown separately.
[2] Commodities and services.
[3] Chained consumer price index (C-CPI-U) reflects the effect of substitution that consumers make across item categories in response to changes in relative prices.
[4] Quarterly changes are shown in the last month of the quarter.

Source: Department of Labor (Bureau of Labor Statistics).

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Glenn A. Watkins, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 4-SR, 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: December 14, 2021 Signature: _____
*320950 Glenn A. Watkins

Consultant Address: Technical Associates, Inc.
6377 Mattawan Trail
P.O. Box 1690
Mechanicsville, VA 23116

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3027385 (Water)
	:	C-2021-3028466 (Water)
v.	:	R-2021-3027386 (Wastewater)
	:	C-2021-3028467 (Wastewater)
Aqua Pennsylvania, Inc. and	:	
Aqua Pennsylvania Wastewater, Inc.	:	

SURREBUTTAL TESTIMONY

OF

ROGER D. COLTON

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

December 14, 2021

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Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

Q. ARE YOU THE SAME ROGER COLTON WHO HAS PREVIOUSLY PREPARED DIRECT TESTIMONY ON BEHALF OF THE OFFICE OF CONSUMER ADVOCATE?

A. Yes, I am.

Part 1. Response to Aqua PA Witness Rita Black.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR SURREBUTTAL TESTIMONY.

A. In this part of my Surrebuttal Testimony, I respond to the Rebuttal Testimony of Aqua PA Witness Rita Black regarding low-income universal service issues. Rather than responding to the issues in the order presented by Ms. Black, I first respond to those issues on which there is some agreement. I then turn to that set of issues on which there is disagreement.

A. Areas of Full or Partial Agreement.

Q. WHAT IS THE FIRST AREA OF SOME AGREEMENT?

A. Aqua PA witness Black testifies that she disagrees with CAUSE-PA Geller's proposal to establish the Aqua PA CAP as a "pilot" program. She states that pilot programs "can be more difficult to promote to customers and place participants at risk of loss of benefits if the pilot program is discontinued. Approving Aqua PA's proposal as a permanent program does not preclude changes to the program to improve the benefits, processes and

other aspects of the program in future years." (Aqua St. 10-R, at 7). I agree with both Ms. Black's conclusion and her reasoning. There is no need for Aqua PA to adopt its CAP as a "pilot program." To the extent that changes are needed in the future, those changes can be made. As I recommended in my Direct Testimony, with the modifications I recommended, the Aqua PA CAP should be approved as a permanent program.

Q. WHAT IS THE SECOND AREA OF SOME AGREEMENT?

A. Aqua PA witness Black responded to my Direct Testimony regarding the need to tie Aqua PA's arrearage forgiveness and bill discount programs together. I had testified that there should not be two separate applications for those programs. Ms. Black states in her Rebuttal Testimony that "The proposal in this proceeding is to replace the existing Helping Hand program with a CAP that includes both affordability and arrears forgiveness components.[1] Participants who enter the program with an arrearage will receive the arrearage forgiveness benefit. There are not two separate applications or programs." (Aqua PA St. 10-R, at 2). I agree with that approach and recommend its approval.

However, Ms. Black then goes on to testify that "Aqua PA is not planning an automatic enrollment in CAP for existing Helping Hands customers. . .The company plans to mail a letter to current Helping Hand customers to explain the current program is being replaced with a new program with expanded benefits. The letter will explain the benefit of the

[1] She notes that the existing program includes only arrearage forgiveness. (Aqua PA St. 10-R, at 2).

CAP and encourage them to apply to participate." (Aqua PA St. 10-R, at 3). Ms. Black's explanation for why there must be a new enrollment for the "new program" does not justify that requirement. The "new program" has the same arrearage forgiveness as the old, but adds the rate discount to it. The "new program" does not have more stringent income guidelines. The "new program" does not have a more stringent application procedure (or income documentation requirement).

Moreover, as Ms. Black acknowledges, the new program "is to *replace* the existing Helping Hand program. . ." (Aqua PA St. 10-R, at 2) (emphasis added). The existing Helping Hand program, in other words, will no longer exist after the CAP is approved. Under the process proposed by Ms. Black, in other words, there will be a group of customers who had been participating in the existing Helping Hand program; who have arrears that have not yet been completely forgiven (given the combined impact of the "timely payment" requirement, and the limitation to a $25/monthly credit, both of which Aqua PA has agreed to replace when able to do so); who will not (for whatever reason) apply to the new CAP and gain access to new arrearage forgiveness; and who will no longer have a Helping Hand program forgiveness through which they may complete reducing their arrearage balance.

I can understand why Aqua PA would not want to run parallel programs (one of which has been discontinued). Even if Aqua PA adopts the expanded monthly arrearage forgiveness credit as I recommend below, running parallel programs would need to continue for several years to come. That would foreseeably cause confusion on the part

of customers. However, at a minimum, losing their existing Helping Hand arrearage forgiveness benefits would also cause confusion on the part of existing Helping Hand participants, particularly if those existing participants were current on their payment obligations. Moreover, it would foreseeably impede future enrollment in the "new" CAP once word got out that the "old" Helping Hands program did not fulfill its obligations to provide arrearage forgiveness for no reason other than that Aqua PA decided to discontinue that program and implement a new substitute program.

I recommend, as I did in my Direct Testimony, that existing Helping Hands participants be automatically migrated to the new CAP. If Aqua PA firmly believes that it absolutely needs to "ensure customers who enroll are eligible," (Aqua PA St. 10-R, at 3), it could limit the participation of those automatically migrated exclusively to the CAP arrearage forgiveness program component unless and until those customers submit a new application. Even this limited migration, however, would seem to lend itself to the creation of confusion and be less ideal that simply automatically migrating participants in the existing Helping Hand program to the new CAP.

Q. WHAT IS THE THIRD AREA OF SOME AGREEMENT WITH AQUA PA WITNESS BLACK?

A. Aqua PA witness Black responds to I&E witness Wilson's opposition to the Aqua PA proposal to allow for self-attestation of income as a means to enroll in the new CAP. In her Rebuttal Testimony, Ms. Black persuasively noted that Ms. Wilson's theoretical problems to the use of self-attested income (i.e., a spike in fraudulent applications), when

tested in the real world, did not occur in reality. (Aqua PA St. 10-R, at 4). Ms. Black stated in her Rebuttal Testimony that "The Company will continue to review and monitor any necessary requirements to participate going forward." (Aqua PA St. 10-R, at 4).

I agree with the approach proposed by Ms. Black, with one minor expansion. Rather than merely committing to "continue to review and monitor" the situation going forward, it would not be unreasonable for Aqua PA to commit to engage in a review of a designated percentage of CAP participants, randomly selected, and report "error rates" (i.e., over-income customers who were enrolled) to the Bureau of Consumer Services (BCS). If error rates were higher than deemed to be reasonable, BCS and Aqua PA could develop appropriate remedial actions. In suggesting this, I note that this process may not only identify the presence (or absence) of high error rates overall, but also the presence (or absence) of high error rates for particular points of program entry. I do not propose a particular remedy because different types of error rates may well merit different remedial action.

Q. WHAT IS THE FOURTH AREA OF AGREEMENT?

A. Aqua PA witness Black testifies that while she agrees that providing arrearage forgiveness upon a customer making a full payment, irrespective of whether that payment is "timely" "is more beneficial to the customer, particularly in the cases of customers that may miss their due date on a regular basis due to the timing of their income or irregular income," she states that "the difficulty Aqua PA currently faces is related to its current information system." (Aqua PA St. 10-R, at 9). She states that "upon conversion to

SAP, Aqua PA's program will provide arrearage forgiveness benefits for each full CAP payment made, regardless of timeliness." (Aqua PA St. 10-R, at 10). I accept both the commitment and the reasoning expressed by Ms. Black. Given the commitment to provide forgiveness upon receipt of a full payment, as soon as the information system conversion allows for it, this issue seems to be resolved.

Q. IS THERE A FIFTH AREA OF AGREEMENT?

A. There is a fifth area of potential, or partial, agreement. Aqua PA witness Black testifies that while the "Peoples Companies and most Pennsylvania energy utility CAPs, to my knowledge, provide arrearage forgiveness as a three-year benefit," she asserts that "Aqua PA's current billing system does not have the capability to implement such a customized arrearage forgiveness benefit. It does, however, have programming in place to provide $25 per month credits as are currently in place for Helping Hands participants." (Aqua PA St. 10-R, at 8 – 9). I accept Ms. Black's representation that Aqua PA's existing information system does not have the capacity to provide arrearage forgiveness as a three-year benefit.

However, Ms. Black asserts that a credit of $25 per month is reasonable given that this credit would allow customers with arrears less than $900 to pay off their arrears within three years. According to Aqua PA, however, the average arrears at the time its existing Helping Hands customers entered the program was never as low as $900. Table 1 below sets forth the data for May 2020 through August 2021.

Table 1. Average Arrears at Time of Helping Hands Enrollment (CAUSE-PA 1-27 Supplement)[2]

Month of Enrollment	Avg Arrears at Time of Enrollment	Credit	Months to Retire
May-20	$983.56	$25	39
Jun-20	$1,311.36	$25	52
Jul-20	$1,049.92	$25	42
Aug-20	$1,074.20	$25	43
Sep-20	$1,087.46	$25	43
Oct-20	$1,113.41	$25	45
Nov-20	$1,133.69	$25	45
Dec-20	$1,155.82	$25	46
Jan-21	$1,177.78	$25	47
Feb-21	$1,212.91	$25	49
Mar-21	$1,248.55	$25	50
Apr-21	$1,254.71	$25	50
May-21	$1,415.81	$25	57
Jun-21	$1,404.57	$25	56
Jul-21	$1,337.26	$25	53
Aug-21	$1,311.36	$25	52

As can be seen, even at the average arrears, the $25 credit would require between four and nearly five years to retire (assuming that timely payments were made each month over that period of time). The $25/month credit proposed by Aqua PA is not reasonable. It would be unreasonable to structure a monthly credit to address only those program participants on average. That would mean that the credit is unreasonable in half of the instances (i.e., those customers with arrears exceeding the average).

[2] Aqua PA states that data before May 2020 was not available. (CAUSE-PA-1-27, Supplement).

Accepting for the present time that Aqua PA's information system can only provide arrearage forgiveness credits as a monthly fixed dollar amount, a $45 monthly credit would be more appropriate. This $45 credit is a calculated amount. As shown in Table 2, a $45 credit allows a three-year forgiveness for customers with arrearages up to 25% greater than the average. It should be adopted.

Table 2. Calculation of $45 Monthly Arrearage Forgiveness Credit
(based on CAUSE-PA-1-27, Supplement)

	Avg Arrears at Time of Enrollment	Multiplier	Adjusted Balance	Credit	Months to Retire
May-20	$983.56	25%	$1,229.45	$45	27
Jun-20	$1,311.36	25%	$1,639.20	$45	36
Jul-20	$1,049.92	25%	$1,312.40	$45	29
Aug-20	$1,074.20	25%	$1,342.75	$45	30
Sep-20	$1,087.46	25%	$1,359.33	$45	30
Oct-20	$1,113.41	25%	$1,391.76	$45	31
Nov-20	$1,133.69	25%	$1,417.11	$45	31
Dec-20	$1,155.82	25%	$1,444.78	$45	32
Jan-21	$1,177.78	25%	$1,472.23	$45	33
Feb-21	$1,212.91	25%	$1,516.14	$45	34
Mar-21	$1,248.55	25%	$1,560.69	$45	35
Apr-21	$1,254.71	25%	$1,568.39	$45	35
May-21	$1,415.81	25%	$1,769.76	$45	39
Jun-21	$1,404.57	25%	$1,755.71	$45	39
Jul-21	$1,337.26	25%	$1,671.58	$45	37
Aug-21	$1,311.36	25%	$1,639.20	$45	36

Q. DO YOU HAVE A CAUTION FOR THE COMPANY WITH RESPECT TO THE DESIGN OF ITS ARREARAGE FORGIVENESS PROGRAM?

A. Yes. Aqua PA witness Black, in responding to my recommendations regarding the appropriate level of arrearage forgiveness credits, noted that "the availability of the [federal] Low-Income Household Water Assistance Program (LIHWAP), expected to begin in January of 2022, will, as noted by I&E Witness Wilson, provide assistance to low-income customers with arrears, further reducing balances." (Aqua PA St. 10-R, at 9). While not explicitly saying this, Ms. Black's testimony appears to imply that the Commission could approve lower arrearage forgiveness credits due to the existence of the LIHWAP benefits. [3] Proposals have been advanced by I&E witness Wilson, agreed to by Aqua PA witness Black (Aqua PA St. 10-R, at 15), that Aqua PA track the receipt of, and use of, LIHWAP benefits by Aqua PA low-income customers. Tracking such data is only reasonable and should occur.[4] However, I caution that Aqua PA should take care not to design its program to reduce arrearage forgiveness benefits based on the assumption that LIHWAP benefits are available as a resource to help pay those arrears.

Q. IS THERE A SIXTH AREA OF SOME AGREEMENT.

[3] LIHWAP is a temporary financial assistance program responding to COVID-related crisis situations. Pennsylvania will administer LIHWAP in a manner similar to the federal energy assistance program (the Low-Income Home Energy Assistance Program, LIHEAP).

[4] According to a November 15, 2021 training by the Pennsylvania Utility Law Project ("PULP") and the Pennsylvania DHS, Pennsylvania will receive $43.25 million in LIHWAP funding, of which 80% will be used for benefits to eligible customers (10% to be used for outreach; 10% to be used for administration). The program is expected to "open" on January 4, 2022 in Pennsylvania. Marx and Whorl, The Low Income Household Water Assistance Program: A Primer for Social and Legal Services Providers. Available at https://www.rhls.org/utilities/pulp/links-to-utility-resources/training-recordings-and-resources/ (last accessed December 12, 2021). In language that mirrors the corresponding LIHEAP language, vendor agreements require that utilities accepting LIHWAP funds will not discriminate against LIHWAP recipients. (Id.)

A. Aqua PA witness Black testifies that she "agree(s) that community education and outreach plans are an important component of universal services programs as it increases awareness among customers as well as agencies and organizations supporting our customers." (Aqua PA St. 10-R, at 5). She references the need to focus on "customer touchpoints." (Aqua PA St. 10-R, at 5). I agree with each of her statements in this regard.

Where Ms. Black's testimony falls short is when she then expands on her concept of "customer touchpoints." Her Rebuttal Testimony states that "utilities have multiple touchpoints with low-income households, often due to payment trouble, collection activities and restoration of service. *Using these touchpoints* to inform customers of programs and guide them to enrollment is a key component of the outreach and education plan that Aqua PA will implement." (Aqua PA St. 10-R, at 5) (emphasis added).

Ms. Black's concept of "customer touchpoints" is too limited. And her Rebuttal Testimony does not address the shortcomings I identified in my Direct Testimony. Her Rebuttal Testimony continues to be founded on the notion of "customer touchpoints" being only those touchpoints *with the utility*.

As my Direct Testimony documented, Aqua PA's approach, involving a reliance on utility-based "customer touchpoints" does not succeed in adequately reaching areas with high concentrations of customers in need. While I agree with Ms. Black's proposed use of utility-based "customer touchpoints," I *disagree* with an exclusively reliance on such touchpoints. Successful outreach programs have been shown that:

- the outreach should focus on *community-based* outreach as well as utility-based outreach. "Touchpoints" can involve a presence at community centers, senior centers, local houses of worship, and local schools.
- the outreach is best implemented through "trusted messengers" that are part of the community toward which outreach is directed. In addition to having utility customer service representatives or collection staff promoting the programs, there should be representatives from within the community who are involved.
- the outreach should be focused through boots-on-the-ground grassroots strategies. Research consistently demonstrates that this boots-on-the-ground grassroots outreach out-performs outreach such as that provided through mass media, social media, utility-sponsored efforts, and top-down sponsored events; and
- the outreach should be focused on efforts to go to where the community is rather than making the community come to the utility. The strategy is to identify where the community lives, works, plays and prays and to be present at those locations rather than to sponsor "events" that community members must attend.

Accordingly, while I do not disagree with what Ms. Black proposes as being appropriate, I disagree that what Ms. Black proposes is sufficient or adequate. Instead, each of the elements identified immediately above is missing from that outreach which Aqua PA proposes as explained in Ms. Black's Rebuttal Testimony. Accordingly, Aqua PA should be directed to include within its Community Education and Outreach Program (CEOP); information to identify the community partners with which it proposes to work; to specifically identify the grassroots community organizations that will provide boots-on-

the-ground efforts; and to identify those times and places where the Company proposes to meet the community where members of that community live, work, pray and play.

Q. IS THERE A FINAL AREA OF SOME AGREEMENT YOU FIND WITH THE REBUTTAL TESTIMONY OF AQUA PA WITNESS BLACK?

A. Yes. Aqua PA witness Black testifies that "Aqua PA customer data is currently housed in its customer information system. Because Aqua PA will be converting to SAP in 2023 and development of system requirements is in the early stages, programmatic changes to the existing system are not recommended. The components of the proposed CAP, including the discount and arrearage forgiveness benefits, were designed considering current functionality." (Aqua PA St. 10-R, at 8). I accept Ms. Black's characterization of the lack of capability of Aqua PA's existing information system. I further accept that making major program changes in an obsolete system, for a period of time that could be measured in months rather than years, may not be an efficient use of Aqua PA staff time or Aqua PA ratepayer money.

Having said that, Aqua PA witness Black did *not* explain why the Company's new SAP, to be implemented in 2023, could not or should not be built with the capability to provide the services I have proposed. Aqua PA should commit to build into its new information system the functionality to deliver arrearage forgiveness benefits, as well as to deliver percentage of income benefits and multi-tier rate discounts. Whichever approach is proposed and approved in the future, the Aqua PA information system's "lack of capability" to implement such a program should not be asserted once the new system is

implemented. Moreover, the capability to adequately serve Aqua PA's low-income customers should be present at the time the new system is implemented, and *not* at some undesignated future date after implementation.

B. Areas of Disagreement.

Q. WHAT IS THE FIRST AREA OF DISAGREEMENT WITH THE REBUTTAL TESTIMONY OF AQUA PA WITNESS BLACK?

A. Aqua PA witness Black appears to oppose the implementation of a Percentage of Income Plan by Aqua PA. She argues first that "The Company's proposal decreases that monthly responsibility through offering discounts that are tiered to provide larger discounts to those with lower income. This proposal improves affordability." (Aqua PA St. 10-R, at 10). Ms. Black's Rebuttal Testimony, however, doesn't address the problems I find with the Company's proposed discounts as proposed:

First, while the Company's proposal does offer discounts that are tiered to provide larger discounts to those with lower incomes, this is true only to a degree. A three-person household with a 2021 income at 100% of Poverty ($21,960) receives the same discount as a three-person household with a 2021 income of 50% of Poverty ($10,980). A three-person household with a 2021 income at 100% of Poverty ($21,960) receives the same discount as a one-person household with a 2021 income ($6,440).

Second, while the proposal may "improve affordability," that conclusion is somewhat meaningless. Any and every reduction in bills, irrespective of the level of the reduction,

could be said to "improve affordability." The fact is that, given actual Aqua PA bills,[5] and Aqua PA's proposed discounts, customers with income at 50% of Poverty will have water burdens of more than 8% of income in 191 of Aqua PA's 239 Zip Codes. (Colton Direct at 30, Table 8). In the other 48 Zip Codes, water burdens (after applying the proposed discount) are above 5% of income. These customers clearly receive fewer benefits than they need to achieve an affordable burden (even if one does not choose from the burdens commonly used to define "affordable").

Third, while the proposal incorporates tiers to provide greater discounts to those with lower incomes, the impact of these tiers is, nonetheless, to *over*-pay customers with higher incomes and to *under*-pay customers with lower incomes. The Aqua PA proposed tiers leave all 239 Zip Codes with water burdens (not considering sewer) above 5% of income at income less than 50% of Poverty. In contrast, the Aqua PA tiers leave: (1) 1 (of 239) Zip Codes with burdens of less than 3% of income at 50 – 100% of Poverty; (2) 2 (of 239) Zip Codes with burdens of less than 3% of income at 100 – 124% of Poverty; and (3) 235 (of 239) Zip Codes with burdens of less than 3% of income at 185 – 200% of Poverty.

Fourth, Aqua PA witness Black asserts that she "believe(s) the current discount structure encourages conservation. This also serves to control program costs." (Aqua PA St. 10-R, at 11). She doesn't explain, however, what her belief is based upon. In fact, the Table

[5] In my Direct Testimony, I distinguished between the hypothetical bills presented by Aqua PA at an assumed "average" usage of 4,000 gallons and the "actual" bills reported by Aqua PA for the twelve months ending September 2021. (OCA St. 5, at 28 – 30).

below shows the amount of the discount for usage in increments of 1,000 gallons, beginning with half (50%) of the average consumption and extending up to 200% of average consumption. As one can see, rather than "encouraging conservation," the amount of the discount that Aqua PA proposes is *identical* for every level of consumption both above and below average. Someone who consumes at a level ranging from 50% of average residential consumption to at 200% of average residential consumption (or more) will receive *exactly* the same dollar discount under Aqua PA's proposed discount structure.

Table 3. Amount of Dollar Discount (by Poverty Range) at Aqua PA's Proposed Discounts (based on OCA-V-2)

	2000 Gallons (50% average)	3000 Gallons (75% average)	4000 Gallons (average)	5000 Gallons (125% average)	6000 Gallons (150% average)	7000 Gallons (175% average)	8000 Gallons (200% average)	Any Usage >8000 Gallons
0 – 100% FPL	$39.30	$39.30	$39.30	$39.30	$39.30	$39.30	$39.30	$39.30
100 – 150% FPL	$28.65	$28.65	$28.65	$28.65	$28.65	$28.65	$28.65	$28.65
>150% FPL	$18.00	$18.00	$18.00	$18.00	$18.00	$18.00	$18.00	$18.00

As can be seen in the data above, contrary to what Aqua PA witness Black asserted in her Rebuttal Testimony, using the tiered discount proposed by the Company does not "promote conservation." Discount amounts within each FPL range do not change based on a reduction in usage. Moreover, contrary to Ms. Black's assertion that conservation "serves to control program costs," the tiered discount has no such effect. The program cost of the tiered discount is identical whether a program participant has usage at 50% of average residential consumption, at 100% of average residential consumption, or at 200%

of residential consumption, or at any other usage above 200% of average residential consumption.

In contrast, the Percentage of Income Plan (PIP) now operated by Aqua PA's sister utility Peoples succeeds in promoting conservation. While I understand that the Peoples PIP is a natural gas program, given that Ms. Black cites to that program as a basis for opinions and conclusions, I will do the same thing. In accordance with Commission regulations, Peoples engaged an external third party evaluator to assess its PIP; the most recent evaluation was published in 2017.[6] In that Evaluation, Peoples specifically considered the impact of its PIP on the natural gas consumption of PIP participants. By relying on the Peoples Evaluation, we can determine the impact of the PIP on participant usage using real information, rather than on supposition or on theory. As shown in the Table below, the Peoples Evaluation reported that nearly three times more Peoples PIP participants reduced their consumption under PIP than increased their consumption under PIP. While 25% of PIP participants reduced their usage, only 9% increased their consumption. More than half of all PIP participants reported no change in their consumption.

[6] APPRISE, Inc. (Augus6t 2017). Peoples Natural Gas, 2017 Universal Service Program Evaluation, Final Report, available at https://www.puc.pa.gov/General/pdf/USP_Evaluation-Peoples.pdf, last accessed December 12, 2021.

Table 4. Conservation Impacts of Peoples Percentage of Income Plan
(Peoples Universal Service Evaluation, 2017, at 50 – 51)

Was your gas usage higher, lower, or no change while participating than while not participating?	Percentage	Reason for Usage Increase	Percentage
Higher	9%	Cold winter	4%
Lower	25%	Household in need of weatherization	2%
No change	54%	Can use more gas because of CAP	1%
Don't know	11%	Additional household residents	1%
Refused	1%	Usage did not increase	91%
Total	100%	Don't know	1%
		Refused	0%

As the Table above further shows, even amongst those PIP participants who reported an increase in their usage under PIP, the increase was not attributable to their program participation. Of the 9% who reported an increase in usage, 4% said the increase was due to a cold winter, while an additional 1% said the increase was due to an increase in the number of household residents. Only 1% (out of 9%) said that they increased their gas usage under PIP because they "can use more gas because of CAP."

The conservation impact of a PIP can be seen from the converse perspective as well. The Peoples Evaluation found that 25% of PIP participants reported using less natural gas after they began their PIP participation than they did before they began their PIP participation. The Peoples Evaluation asked those customers using less natural gas why their usage decreased. As the Peoples data reports, two-thirds of those reporting lower usage (16% of 25%) said their consumption decreased because they were *trying* to reduce or conserve. An additional 3% said their usage decreased because they received services

through an external program (i.e., a program for which they had to apply). Only 3% said they "didn't know" why their usage decreased.

Table 5. Reason for Conservation Impacts of Peoples Percentage of Income Plan
(Peoples Universal Service Evaluation, 2017, at 50 – 51)

Why do you feel your usage decreased	Percentage
Trying to reduce/conserve	16%
Weather	5%
Received weatherization/WAP/LIURP	2%
Other services received	1%
Usage did not decrease	75%
Don't know	3%
Refused	0%

Based on the above information, and using real data from the same utility that Aqua PA witness Black cites in her own Rebuttal Testimony, we can see that a PIP is not "anti-conservation."

Q. IS THERE A REASON IN ECONOMIC THEORY WHY A PIP WILL PROMOTE CONSERVATION WHILE AQUA PA'S PROPOSED DISCOUNT WILL NOT?

A. Yes. In economic price theory, the viability of sending a price signal assumes that the customer has the ability to *receive and to act upon* the signal.[7] If a customer has an ability to pay $50 per month, in other words, the price signal sent to a customer by receiving a bill of $75 rather than $65 is negligible, if any signal exists at all. In contrast,

[7] From an economic theory perspective, it is easy to understand this result. From a price theory perspective, price signals "work" only if there is adequate information about price and quality. The inability-to-pay, and the resulting arrears, impedes this information process. By improving this information process, while maintaining the task of reflecting increases and decreases in a bill, the bill affordability program improves rather than distorts the price signal.

the price signal received by the customer with an ability to pay $50 through a bill for $49 rather than a bill for $55 is more significant. The closer that a utility can tailor bills to reflect affordability, the more efficacious any price signal will be. A low-income discount program that reduces bills to an affordable level actually *improves* the price signaling of utility rates. As I demonstrated in my Direct Testimony, Aqua PA's tiered rate discounts leave water burdens well above low-income ability-to-pay. They cannot be expected to promote conservation as Ms. Black says she "believes" will happen.

Q. IS THERE A SECOND AREA OF DISAGREEMENT YOU HAVE WITH THE REBUTTAL TESTIMONY OF AQUA PA WITNESS BLACK?

A. Aqua PA witness Black summarily asserts, without quantitative support or analysis whatsoever, that "Percentage of income plans. . .are typically more expensive to implement and are more costly to ratepayers." (Aqua PA St. 100-R, at 11). There are five responses to this argument (in addition to the observation that Ms. Black's statement is made with a complete absence of evidentiary support).

First, one impact of a percentage of income plan is that the program delivers benefits only to customers in need and, even then, only in the amount needed. In contrast, Aqua PA's tiered discount proposes to deliver dollars of benefits to customers irrespective of whether they need such discounts to achieve an affordable water burden. Because customers at higher ranges of the Federal Poverty Level (e.g., 150% to 200% of FPL) tend to have affordable bills even without receiving ratepayer-funded assistance, for example, maximum income eligibility for PIP participation is effectively set at 150% of

FPL (even if, on paper, maximum income eligibility might exceed that level). It is not possible to know whether PIPs are "more expensive to implement and more costly to ratepayers" in the absence of this information. It is entirely possible, however, that a PIP would reduce, rather than expand, the costs of providing assistance because that assistance is better targeted to unmet needs on the Aqua PA system.

Second, the costs of providing bill assistance that might increase due to a move to a percentage of income plan for bills for current service may well be offset by cost reductions in other program components. As a result, *total* program costs could well decrease through adoption of a PIP. For example, moving to a PIP for bills for current service could, and should, be coupled with using a percentage of income approach for arrearage forgiveness. Under this approach, PIP participants would not receive forgiveness of 100% of their pre-existing arrears. Instead, just like their bills for current service, PIP participants would be required to pay an affordable percentage of income (e.g., .5% for water; 1.0% for combined water/sewer) toward pre-existing arrearages. The decreased costs associated with moving to a PIP-based arrearage forgiveness could be more than sufficient to offset any increased costs of moving to a PIP for bills for current service. With Aqua PA's sister utility Peoples, for example, nearly 30% of total CAP costs are associated with its arrearage forgiveness.[8] In contrast, only 60% of its total CAP costs are associated with the CAP credits for current service. It is not only possible, but likely, that even if the costs for bill assistance for current service increased

[8] BCS annual Report on Universal Service Programs and Collections Performance, at 62, available at https://www.puc.pa.gov/filing-resources/reports/universal-service-reports/ (last accessed December 8, 2021).

through a PIP, controlling arrearage forgiveness costs through a PIP-based program would result in an overall decrease in serving low-income customers.

Third, one observation that Ms. Black does not acknowledge is that PIPs in Pennsylvania have adopted a series of "cost control mechanisms" that would not be available to help control the costs of Aqua PA's tiered discount program. One cost control mechanism, for example, involves a minimum payment. Given Aqua PA's proposed discounts on the fixed customer charge, as well as the first consumption block, no minimum payment is available through the Company's tiered discount program. Indeed, if a customer with income at or below 100% of the Federal Poverty Level has consumption at or below 2000 gallons per month, that customer will receive a bill of $0 under the Company's tiered discount proposal (100% off the fixed customer charge plus 100% off of the first 2000 gallons of consumption). That would not happen under a PIP.

Fourth, Ms. Black does not acknowledge that under a PIP, every gallon of reduced water consumption that occurs as a result of water conservation investments yields reduced program costs to non-participants. If certain customers impose a higher cost on the program, either because of high bills or because of low incomes (yielding low burdens), the program cost can be substantially reduced through targeted conservation investments. With the tiered discount, however, as shown in Table 3, the amount of the discount is the same whether a customer has usage at half of the average residential usage or has usage at twice the average residential usage.

Finally, even if one accepts, which I do not, Ms. Black's conclusory assertion that the cost of a PIP would be more than the cost of Aqua PA's tiered discount, the tiered discount provides more expenditures than are necessary to provide in some instances, and fewer expenditures than are necessary, in other instances. In either case, the tiered discount fails to accomplish the same objectives as a PIP would accomplish. As I noted in my Direct Testimony, and as even Aqua PA's working capital witness Aqua PA's William Packer stated:

> Specifically, regarding the rate making calculation of cash working capital, it depends on the manner of the calculation. The Company's calculation of average outstanding accounts receivable includes the balance of reserve for doubtful accounts, thus the timing differences caused by arrearages has been netted with actual accounts receivable and results in a lower calculation of average days outstanding, thus reducing the cash working capital for ratemaking purposes. Offsetting this side of the calculation is the calculation of the Company's bad debt expenses, which do include reserves for uncollectible accounts on a normalized (non-covid) (sic) basis. *In that regard, shortening customer arrearages undoubtedly reduces cost-of-serve either through cash working capital or the collection of bad debt expense to the extent reserves recoded for customer accounts are reduced.*

(OCA-V-18(a). (emphasis added). Mr. Packer agreed further that:

- Reducing the time (in days or months) that an arrearage remains outstanding will, all else equal, have the effect of reducing the capital needed by a utility (OCA-V-18(b));

- Working capital is a cost component that has equity return associated with it (OCA-V-19(c));

- To the extent that working capital has equity return associated with it, it will have a tax component associated with it (OCA-V-18(d));

- A higher dollar level of arrearages poses a greater risk of loss due to uncollectibles than a lower dollar level of arrearages (OCA-V-18(e));

- Reducing the number of customers who are off-system due to a disconnection of service will, all else equal, reduce lost sales to a utility (OCA-V-18(f)); and

- Reducing the number of customers receiving final bills with an unpaid balance will, all else equal, have the effect of reducing costs to a utility (OCA-V-18(g)).

Given that Aqua PA's tiered discount leaves the Company's low-income customers with excessive water burdens (i.e., bills as a percentage of income), the tiered discount will not yield these corresponding cost reduction impacts.

Q. WHAT DO YOU CONCLUDE ABOUT YOUR FIRST AREA OF DISAGREEMENT WITH AQUA PA WITNESS BLACK?

A. I conclude that a PIP would be a superior program design when compared to Aqua PA's proposed tiered rate discount. I conclude further that, as I recommended in my Direct Testimony, Aqua PA should be directed to propose a PIP no later than its next base rate case. Even if Aqua PA's existing information system lacks the current functionality to implement a PIP, as Ms. Black acknowledges, by 2023, Aqua PA will have implemented a new information system. Given that new information system, the lack of functionality should no longer be at issue as a barrier to PIP implementation.

Q. PLEASE EXPLAIN YOUR SECOND AREA OF DISAGREEMENT WITH THE REBUTTAL TESTIMONY OF AQUA PA WITNESS BLACK.

A. Aqua PA witness Black asserts in her testimony that the Company's current information system does not have the capability to incorporate a four-tiered rate discount. She asserts that "due to the complexity of rate maintenance in Aqua PA's current customer

information system, the tiers currently proposed will be quite an undertaking and adding any additional tiers would further complicate enrollment and maintenance processes." (Aqua PA St. 10-R, at 11). Ms. Black made similar observations regarding the ability of Aqua PA's antiquated and obsolete system to address problems with modifying its bill assistance to a PIP, in modifying its arrearage forgiveness to provide forgiveness credits based on full payments, and in modifying its arrearage forgiveness to provide bill credits to reduce pre-existing arrears to $0 over three years rather than providing a flat dollar credit each month. I accept her observation at this point as well that the Company's obsolete system is why only three tiers –not four—can be used for its discount program. Nonetheless, while Ms. Black explained why the use of three tiers is necessary, she made no effort to explain why the specific three tiers she proposes are the appropriate three tiers.

In fact, as I document in my Direct Testimony, even assuming that the obsolete information technology of Aqua PA would allow for only three tiers, not four as I recommended, the three tiers proposed by Aqua PA should be modified. Rather than having three tiers at: (1) 0 – 100% FPL; (2) 100 – 150% FPL; and (3) more than 150% FPL, if one were to use a three-tier system, those three tiers should be: (1) 0 – 50% FPL; (2) 50 – 150% FPL; and (3) more than 150% FPL. As I document in my Direct Testimony, the three-tier system proposed by Aqua PA significantly under-serves those customers with income less than 50% of Poverty. The more homogenous group, when viewed from the perspective of need, involves the group of customers from 50% to 150% of FPL. As I document in my Direct Testimony, Aqua PA's proposed rates would result

in undiscounted bill burdens as set forth in the Table below (OCA St. 5, at 28, Table 7). This data clearly shows that the population at 0 – 50% of Poverty is distinct from the higher income populations. The appropriate break-points for discounts, assuming a three-tier discount, should be 0 – 50% of Poverty (yellow-shaded cells); 50 – 150% of Poverty (green-shaded cells); and more than 150% of Poverty (blue-shaded cells). The point of establishing tiers is to group those customers with the most similar undiscounted burdens into the same tier. The three tiers I propose above (assuming a three-tier discount) are more appropriate than the three-tiers recommended by Aqua PA.

Table 6. Number of Zip Codes By Aqua PA Water Burden
at Proposed Rates and Proposed Discounted Low-Income Rates by Range of Poverty Level

	Number of Zip Codes					
Burden Without discount	0 – 50% FPL	50-99% FPL	100 – 124% FPL	125 – 149% FPL	150 – 184% FPL	185 – 199% FPL
Less than 1.5%	0	0	0	0	0	0
1.5% to less than 3%	0	0	0	7	191	235
3% to less than 5%	0	45	234	232	48	4
5% to less than 8%	0	194	5	0	0	0
8% to less than 12%	174	0	0	0	0	0
12% - 15%	63	0	0	0	0	0
15% or more	2	0	0	0	0	0

Q. IF YOU WERE TO CONSOLIDATE YOUR RECOMMENDED FOUR TIER DISCOUNT INTO THREE TIERS IN RESPONSE TO THE DIFFICULTIES MS. BLACK IDENTIFIED WITH AQUA PA'S OBSOLETE INFORMATION SYSTEM, WHAT WOULD THEY BE FOR WATER SERVICE?

A. Accepting Ms. Black's Rebuttal Testimony that Aqua PA's antiquated and obsolete information system does not have the functionality to handle a four tier discount for water

service, the consolidation of my recommended four tier discount into three tiers would yield the following:

- Tier 1: 0 - 50% of Poverty: 100% discount on fixed charge; 100% discount on first 2000 gallons; 40% discount on second 2000 gallons. (This is what I recommended in my Direct Testimony).
- Tier 2: 50 - 150% of Poverty: 100% discount on fixed charge; 80% discount on first 2000 gallons.
- Over 150% of Poverty: I accepted this discount in my Direct Testimony and continue to recommend this discount for this income tier.

As can be seen, the only change from my Direct Testimony is that I consolidate the middle two tiers from my Direct Testimony (50 – 100% of Poverty; and 100 - 150% of Poverty) into a single tier. My recommendations for the bottom tier (0 – 50% of Poverty) and the top tier (over 150% of Poverty) remain the same as I recommended in my Direct Testimony.

Q. IF YOU WERE TO CONSOLIDATE YOUR RECOMMENDED FOUR TIER DISCOUNT INTO THREE TIERS IN RESPONSE TO THE DIFFICULTIES MS. BLACK IDENTIFIED WITH AQUA PA'S INFORMATION SYSTEM, WHAT WOULD THEY BE FOR WASTEWATER SERVICE?

A. Accepting Ms. Black's Rebuttal Testimony that Aqua PA's information system does not have the functionality to handle a four tier discount for wastewater service, the consolidation of my recommended four tier discount into three tiers would yield the following. For wastewater, I recommend continuing to leave the discounts proposed for

incomes at 100 - 150%, and for incomes over 150%, those recommended by Aqua PA. I would then recombine the 0 - 100% of Poverty into one tier. For that tier, I recommend an increase in Aqua PA's proposed discounts (75% off the fixed charge and 100% off the 1st 2000 gallons) to 100% off the fixed charge and 100% off the 1st 2000 gallons.

Q. WHAT IS THE THIRD AREA OF DISAGREEMENT THAT YOU HAVE WITH AQUA PA WITNESS BLACK'S REBUTTAL TESTIMONY?

A. Aqua PA witness Black opposes the recovery of the Company's universal service costs through base rates. She reiterates her recommendation that Aqua PA's CAP costs be recovered through a reconcilable surcharge. She makes several statements that mis-represent Commission policy.

First, she selectively quotes from the PUC's Final Investigatory Order on CAP cost recovery (Docket No. M-00051923, at 13-14) which references the role of a surcharge "to recover actual costs." She argues that she would "consider these surcharges to be so common as to be a standard for cost recovery" for universal service programs. (Aqua PA St. 10-R, at 12).

What she leaves out, however, are the two sentences that immediately precedes the sentence she chooses to quote. In those two sentences, the PUC explained: "Base rate treatment of universal service costs puts the utility at risk of not recovering the full amount of its prudently-incurred costs, which conflicts with the direction given by the General Assembly in the Competition Acts. In addition, the policy arguments for base rate recovery of most utility expenses provided by some of the commenting parties

cannot override the policy decision of the General Assembly to require 'full recovery' of universal service costs." (Final Investigatory Order, at 14-15). In the absence of that statute, the Commission said:

> When an expense is recovered through base rates (as the great majority of utility expenses are) the utility does not have an assurance of "full recovery." The amount of an expense built into rates is based upon the level of expense incurred during the test year, with adjustments for any "known and measurable" changes occurring shortly after the test year. *See, Pa. PUC v. West Penn Power Co.*, Docket No. R-00942986, 1994 Pa. PUC Lexis 144 (Order entered December 29, 1994). Following the establishment of rates, if the actual level of an expense turns out to be higher than the amount built into rates, the utility is not entitled to recover this additional expense except in narrowly-prescribed circumstances. (internal notes omitted).

Final Investigatory Order, supra, at 13-14. The statute cited by the Commission as requiring "full recovery" of universal service costs applies only to the energy utilities, not to water utilities.

Indeed, no other water utility with a universal service program recovers the costs of its program through a reconcilable surcharge. Every other water utility with a rate discount such as proposed by Aqua PA recovers its low-income programming costs through base rates. Ms. Black asserts, without any documentation or discussion, that these other water utilities "have not implemented programs as robust as energy utility CAPs or Aqua PA's proposal." (Aqua PA St. 10-R, at 13). To the contrary, Pennsylvania water utilities such as Pittsburgh Water and Sewer Authority (PWSA) has a tiered discount (and arrearage forgiveness) program. PWSA's program offers additional benefits to customers with income at or below 50% of Poverty (as I propose in this proceeding). Similarly,

Pennsylvania American Water Company (PAWC) also provides discounts to its low-income customers.

While, as noted by Ms. Black (Aqua PA St. 10-R, at 12), the Peoples acquisition settlement paragraph 108 required that Aqua PA "evaluate" the use of "a comparable funding mechanism as utilized by energy utilities in the Commonwealth," that settlement did not require the *adoption* of such a funding mechanism.

Ms. Black further misrepresents the structure of energy utility universal service programs prior to the implementation of reconcilable riders. She asserts that "this recovery model usually included limited enrollment levels. Once a utility's CAP enrollment was 'full,' other income eligible customers who needed assistance were turned away." (Aqua PA St. 10-R, at 12). Ms. Black's implication that "other income eligible customers who needed assistance were turned away" because the program costs included in base rates were exhausted is simply not accurate. In the early days of CAP, various Pennsylvania utilities were allowed to test CAP through "pilot programs." When the PUC approved a 1,000 participant *pilot* program for Columbia Gas, for example, it said "it is incumbent upon us *to initiate a pilot project* to test empirically some of the claims made by [OCA] for an EAP." (emphasis added)[9] So, too, the Commission shortly after its Columbia decision approved a *pilot program* for Equitable Gas.[10] The participation limitations in these

[9] Pennsylvania Public Utility Commission v. Columbia Gas of Pennsylvania, R-891468, Final Order, at 150 – 160 (September 19, 1990).

[10] Pennsylvania Public Utility Commission v. Equitable Gas Company, Docket No. R-901595, Final Order, at 63 – 74 (November 21, 1990).

programs were established at the very beginning of testing the CAP concept. The limits were due to the pilot nature of these programs thirty years ago. Aqua PA's proposed customer assistance program is not a pilot program.

Q. DO YOU HAVE A FOURTH DISAGREEMENT WITH THE REBUTTAL TESTIMONY OF AQUA PA WITNESS BLACK?

A. Yes. Aqua PA witness Black opposes my recommendation that Aqua PA be allowed to recover only the net costs of its low-income discount. (Aqua PA St. 10-R, at 13 – 14). She asserts that "over time, as participation in the program grows and matures to a stable level, bad debt levels will adjust accordingly, reflecting appropriate levels of collectability for the Company." (Aqua PA St. 10-R, at 14). She further asserts that the "basis for the proposed adjustments is the Company does not have a collection study to reflect the historical percentage of billings collected from low-income customers." (Aqua PA St. 10-R, at 13 - 14).

The Rebuttal Testimony of Ms. Black does not provide a basis to deny the lost revenue adjustment that I recommend. The "basis" for my recommended lost revenue adjustment is *not* that Aqua PA has performed no collectability analysis. The basis for my adjustment is that, in the absence of such an adjustment, Aqua PA will recover some parts of low-income rates *twice*. Aqua PA's proposal to include 100% of its low-income discount through rates assumes that, in the absence of the discount, 100% of the billed revenue to discount participants would have been collected. Only given this assumption is it reasonable to say that the dollar amount of the discount needs to be replaced by

separately including that discounted revenue in rates. We know, however, that Aqua PA does *not* collect 100% of its low-income billings in the absence of the discount. As I document in my Direct Testimony:

- Nearly three-of-four (71.9%) of Aqua PA's low-income customers are in arrears;
- Of those low-income customers in arrears, the average arrears is $595.12.
- Of those low-income customers in arrears, the customers are 7.8 bills behind;
- Of the low-income customers who are disconnected, the average arrears at the time of disconnection is $667.10.

(OCA St. 5, at 20 - 21). Those unpaid dollars are currently reflected in rates. What Aqua PA proposes to do is to *continue* to reflect those unpaid dollars in rates and, *in addition*, to collect 100% of its discounted revenues *again* as though all of the discounted revenue would have been collected in the absence of the discount program. My adjustment reflects the principle that Aqua PA cannot have it both ways. And, given that the Company concedes that it has performed no collectability study for its low-income customers, the only way to prevent the double collection is to adopt my recommended lost revenue adjustment.

Even if Ms. Black is correct that, as the Aqua PA low-income discount program ages and mature, the Company may learn how to "reflect[…] appropriate levels of collectability," that forecast does not affect the need for the adjustment in this proceeding. Rates are set according to what is known today, not on what may happen in the future.

Finally, Ms. Black seems to assert that the use of a reconcilable surcharge renders the lost revenue adjustment unnecessary. (Aqua PA St. 10-R, at 14). She asserts, without explanation, that the use of a reconcilable surcharge "will align recovery with actual collection experience." (Aqua PA St. 10-R, at 14). Even if Aqua PA is allowed to use a reconcilable surcharge, which I recommend not occur, that use has no impact whatsoever on the need for a lost revenue adjustment. Whether discounted revenue is collected through base rates, or recovered through a reconcilable surcharge, there would need to be a lost revenue adjustment to ensure that the dollar amount of the discount being recovered does not include billings, not translated into revenues, that have already been included in rates.

The Commission has previously approved an offset such as that which I recommend to prevent double recovery. In the PGW rate proceeding, the Commission held (Docket R-0006193): "The ALJs believe that the OCA made a convincing argument that double recovery is a possibility and can be alleviated by implementing a mechanism for reconciliation and that PGW did not provide a persuasive argument that the current practice guards against double recovery." The full Commission then held in that docket: "We find the ALJs recommendation to be supported by the record as well as Section 1408 of the Code. Accordingly, we find OCA's argument to be convincing. Double recovery of uncollectible accounts expense is a possibility and can be alleviated by implementing a mechanism for reconciliation."[11]

[11] Pennsylvania PUC v. Philadelphia Gas Works, Docket No. R-0006193, slip opinion, at 39, 42, citing CAP Policy Statement (Order entered September 28, 2007).

Q. PLEASE EXPLAIN YOUR FINAL AREA OF DISAGREEMENT WITH THE REBUTTAL TESTIMONY OF AQUA PA WITNESS BLACK.

A. Aqua PA witness Black discusses my review of the Company's performance outcomes in the areas of justified complaints and collections performance. (Aqua PA St. 10-R, at 23 – 25). Her Rebuttal Testimony does not support a conclusion that Aqua PA has exemplary management in these areas.[12]

- Witness Black responds to my discussion of Aqua PA's high "justified complaint rate" by asserting that Aqua PA's justified complaint rate of 10% in 2021 (3d quarter) was lower than its justified complaint rate in 2020. (Aqua PA St. 10-R, at 24). She did not respond, however, to the fact that, even after the improvement, Aqua PA's justified complaint rate was higher than every other Pennsylvania Class A water utility. (OCA St. 5, at 69).

- Neither did Ms. Black respond to the observation that while Aqua PA's "justified complaint rate" declined from 15% to 10% from 2020 to 2021, its total number of complaints increased by 72% through the Third Quarter of 2021, (compared to 33% for PAWC and negative-2% for all other Class A water utilities). (OCA St. 5, at 70). Overall performance on justified complaints for Aqua PA did not improve in 2021.

- Nor did Ms. Black respond to the observation that, aside from its justified complaint rate, as of the end of September 2021, 22% of the reviews of Aqua PA payment arrangement request (PAR) challenges presented to BCS were "justified," compared to 12% for PAWC and to 8% for all other Class A water utilities. (OCA St. 5, at 69).

- Ms. Black's Rebuttal Testimony asserts that increases in the Company's average arrears (for active customers) "are likely attributable to those rate changes rather than lack of collection success." (Aqua PA St. 10-R, at 25). She asserted that "water rates would have increased" over the same time period as the increase in arrears. (Id.) Any rate increases, however, would *not* explain the increase in arrears. As I explain in my Direct Testimony,

[12] Aqua PA witness William Packer also references my Direct Testimony, but only to the extent to say that Ms. Black and Mr. Duerr would respond to it. (Aqua PA St. 1-R, at 27). No specific response is thus made to Mr. Packer.

Pennsylvania's Bureau of Consumer Services (BCS) developed its Bills Behind statistic precisely to allow a comparison of arrears between companies with differing rate levels and between time periods with differing rate levels. With Aqua PA, not only did the level of arrears increase, but as I document in my Direct Testimony (which Ms. Black did not respond to), the Aqua Pa Bills Behind increased by 21% during that same time period (from 2.4 Bills Behind to 2.9 Bills Behind). (OCA St. 5, at 73). Aqua PA's collection outcomes had deteriorated, in other words, even after taking into consideration any increase in bills due to rate increases such as those posited by Ms. Black.

- Finally, Ms. Black asserts that my observation that Aqua PA has increased the number of accounts it disconnects by more than ten-fold since 2012 is misleading because Aqua PA has grown its number of customers due to its acquisition of other water companies. What Ms. Black did not address, however, is that my observation applied not only to the *total* number of disconnections, but also to the number of disconnections *per 100 customers*. In 2012, Aqua PA disconnected 0.14 residential accounts for each 100 residential accounts it had. By 2018, that rate of disconnection had increased to 1.85 disconnections for each 100 accounts, an increase of more than 1300% (i.e., more than ten-fold). (OCA St. 5, at 73). Contrary to Ms. Black's rebuttal, while the growth in the total number of disconnections may be affected by the growth in the size of the utility (due to acquisition), the growth in the *rate* of disconnections (per 100 customers) would not be so affected.

I conclude that Ms. Black's Rebuttal Testimony does not establish the existence of exemplary management based on the metrics I examined in my Direct Testimony.

Part 2. Response to Aqua PA Witness Todd Duerr.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I respond to the Rebuttal Testimony of Todd Duerr (Aqua PA St. 9-R) regarding management performance. Mr. Duerr's Rebuttal Testimony relates to Aqua PA's citations for clean water violations. Mr. Duerr argues in relevant

part that "as with any wastewater system, violations may occur due to weather events or aging infrastructure of a system." (Aqua PA St. 9-R, at 40). He does not assert, however, and there is no evidence to demonstrate, that the violations I cite in my Direct Testimony were due to either of these factors. In fact, in explaining the occurrence of each non-compliance event (Aqua PA St. 9-R, at 40 – 41), none of the explanations involved "weather events or aging infrastructure."

Moreover, Mr. Duerr argues that "superior management includes how the Company responds to non-compliance events." (Aqua PA St. 9-R, at 40). Mr. Duerr's argument proves too much. If superior management can be found from a utility's response to environmental non-compliance, then environmental non-compliance becomes a non-factor in reviewing management performance. If the Company maintains compliance, it argues it is engaging in superior management. If it fails to maintain compliance, it argues that its response involves superior management.

Moreover, Mr. Duerr does not explain why its response to its environmental violations exhibited exemplary management. Indeed, Mr. Duerr states in three of the four instances of non-compliance which he discussed that after the violations had been found, Aqua PA found that one necessary response was to modify its own internal procedures. It would seem inappropriate to find that a utility finding the need to modify procedures only when those procedures contribute to environmental non-compliance is not well-positioned to argue that it is routinely engaging in exemplary management.

Part 3. Response to I&E Witness Christine Wilson.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR SURREBUTTAL TESTIMONY.

A. In this section of my testimony, I respond to the Rebuttal Testimony of I&E witness Christine Wilson regarding cost recovery for Aqua PA's proposed low-income CAP. Ms. Wilson opposes my recommendation that CAP costs be recovered through base rates. She recommends, instead, that CAP costs be recovered through a reconcilable rate rider. Ms. Wilson's Rebuttal Testimony largely reflects the Rebuttal Testimony of Aqua PA witness Black, and her arguments were addressed above:

I&E witness Wilson argues that the Aqua/Peoples acquisition settlement "clearly indicates that both parties agreed Aqua would present a comparable funding mechanism as those used by gas and electric utilities in Pennsylvania." (I&E St. 1-R, at 4). I disagree with Ms. Wilson's characterization of the acquisition Settlement. If the parties had intended to mandate use of a funding mechanism akin to the mechanisms used by Pennsylvania's energy utilities, the Settlement would have said so. Instead, the settlement stated only that Aqua PA was allowed to "consider" such a funding mechanism. In this proceeding, neither I&E nor Aqua PA has presented any justification for the Commission to diverge from the way that the universal service costs of all other water utilities have been recovered.

Ms. Wilson argues that I "do not explain" in my Direct Testimony how Aqua PA "would not potentially over or under-recover associated net costs if projections are incorporated

as a component of base rates which would not be updated until a future base rate case is filed with the Commission." (I&E St. 1-R, at 3-4). Ms. Wilson's Rebuttal Testimony in this regard, however, is simply contrary to fundamental ratemaking principles. As I discuss above in response to Ms. Black's testimony, the Commission has accurately stated Pennsylvania law to be: "When an expense is recovered through base rates (as the great majority of utility expenses are) the utility does not have an assurance of "full recovery.". . .Following the establishment of rates, if the actual level of an expense turns out to be higher than the amount built into rates, the utility is not entitled to recover this additional expense except in narrowly-prescribed circumstances." (internal notes omitted). Final Investigatory Order, supra, at 13-14. Those "narrowly-prescribed circumstances" for the universal service costs of Pennsylvania's energy utilities, involves a statutory mandate of "full recovery" that does not exist for water utilities.

Neither have either I&E or Aqua PA presented a justification for why Aqua PA's universal service costs should be treated in the same way as the corresponding energy utility costs, given that the energy utility cost recovery is dictated by statute which does not apply to Pennsylvania's water utilities.

While I&E witness Wilson references my discussion of net costs in her Rebuttal Testimony, she does not dispute that that Aqua PA's recovery of universal service costs should be limited to the net costs of the program. (I&E St. 1-R, at 5). She does not dispute that Aqua PA would be allowed to double recover its universal service costs by assuming that 100% of the discounted dollars would have been paid in the absence of the

discount. As I explain above, we know that this 100% collection does *not* occur and that inclusion of 100% of the discounted dollars would yield a double recovery. Her reference to net costs is instead limited only to her recommendation that those costs be collected through a reconcilable surcharge.

I&E witness Wilson reiterates her recommendation that Aqua PA be required "to perform income verifications to admit participants into the programs to ensure legitimacy of applicants and reduce misuse of the program." (I&E St. 1-R, at 5). She provides no information documenting that income verification is needed to accomplish either of those objectives. For the reasons I state in my response to Aqua PA witness Black regarding income verification, the Company proposal should be approved. Ms. Wilson's recommendation should not be adopted.

I&E witness Wilson reiterates her recommendation that the "Company be required to demonstrate [that] effort is made to encourage participants to take advantage of the Federal Low-Income Household Water Assistance Program funds made available via the American Rescue Plan." (I&E St. 1-R, at 5). As I testify above in response to Ms. Black's Rebuttal Testimony regarding tracking the use of federal water assistance program benefits, there is no reason for Aqua PA not to encourage participation in the federal program.[13] Aqua PA is working with DHS and intends to participate in LIHWAP

[13] As of December 13, 2021, the LIHWAP program was not yet open in Pennsylvania according to the Pennsylvania Department of Human Services ("DHS"). See generally, https://www.dhs.pa.gov/Services/Assistance/Pages/LIHWAP.aspx (last accessed December 13, 2021). As I noted above, a recent briefing by PULP and DHS indicates that DHS anticipates opening the program on January 4, 2022. No definite date is available on the DHS website.

by signing a DHS vendor agreement. However, I again note the same caution as I note above. Aqua PA should take care not to design its program to reduce arrearage forgiveness benefits based on the assumption that LIHWAP benefits are available as a resource to help pay those arrears.

Q, DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc.	:	C-2021-3028467 (WW)
	:	

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 5-SR, 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: December 14, 2021
*320951

Signature: _____
Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
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OCA STATEMENT 6SR

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3027385 (Water)
	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
v.	:	C-2021-3028467 (WW)
	:	
Aqua Pennsylvania, Inc. and	:	
Aqua Pennsylvania Wastewater, Inc.	:	

SURREBUTTAL TESTIMONY

OF

BARBARA R. ALEXANDER

Barbara Alexander Consulting LLC

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

December 14, 2021

Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

A. My name is Barbara R. Alexander. I am the sole member/owner of Barbara Alexander Consulting LLC. I am a consultant on consumer protection and customer service issues associated with utility regulation. My address is 83 Wedgewood Dr., Winthrop, ME 04364. I appear in this case as a witness on behalf of the Office of Consumer Advocate (OCA).

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A. Yes. I filed Direct Testimony on behalf of the OCA on November 10, 2021 (OCA St. No. 6).

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. I am filing Surrebuttal Testimony in response to the Rebuttal Testimony filed by William C. Packer (Aqua St. No. 1-R) and Rita F. Black (Aqua St. No. 10-R) on behalf of Aqua Pennsylvania, Inc. and Aqua Pennsylvania Wastewater, Inc. (Aqua). Specifically, I will respond to Mr. Packer's Rebuttal Testimony with respect to management performance incentives and Ms. Black's Rebuttal Testimony on customer service performance and her objection to my recommendations.

Q. PRIOR TO YOUR TESTIMONY IN RESPONSE TO AQUA'S REBUTTAL, DO YOU HAVE ANY CHANGES TO YOUR RECOMMENDATIONS?

A. No. I continue to recommend that the following recommendations be adopted as conditions to any rate increase in this proceeding.

- Aqua should be held accountable for the previously agreed to performance standards. Aqua should develop and submit a compliance plan to the stakeholders that, after

review, should be submitted to the Commission for approval and implementation. This compliance plan should include specific action steps and deadlines to achieve compliance.

- In addition, Aqua should be held accountable for the failure to comply with these provisions documented in my testimony with a critical view of Aqua's proposed Return on Equity. Considering my findings and those documented by Mr. Roger Colton, and Mr. Terry Fought on behalf of the OCA, there is sufficient justification to reject Aqua's claim of "exemplary" management as well as support for a consideration of an ROE that reflects the lower bound of reasonableness. My review of the customer service benefits identified by Aqua in its Section 1329 Acquisition proceedings and the lack of any documentation of those customer service performance benefits in this rate case also supports this recommendation.
- Oversight of the Call Center compliance with Pennsylvania consumer protection rules and policies: Aqua should be required to develop and submit a plan that describes specific auditing and oversight policies applicable to its call centers with regular reporting on the results of such evaluations and audits.
- Termination of Service: Aqua should be required to develop specific training programs for its field personnel authorized to terminate service that explicitly includes the obligation to attempt personal contact with a responsible adult immediately prior to termination of service, as well as the recognition and response to the consumer protection rights associated with contact.
- Reconnection of service: In light of Aqua's policy that does not track "reconnection"

1 obligations and rights after a certain time after termination for nonpayment, Aqua
2 should be required to either revise its procedures and document compliance with
3 restoration of service rights and remedies or describe how its current policies reflect
4 these obligations.

5 • Identification of customer disputes: Aqua should adopt a policy that explicitly asks
6 customers if he/she is satisfied with the response to an inquiry or concern to identify
7 potential customer disputes.

8 • Third-party payment fees: Aqua should be required to explicitly consider the
9 elimination of third party payment fees and evaluate the benefits and costs associated
10 with eliminating fees to make payments on their IVR and e-billing web portal and
11 report to stakeholders within 60 days after a final order in this proceeding.

12 • Aqua's charging late fees to customers during the COVID-19 Pandemic: Aqua
13 should evaluate its communications to customers during the Pandemic and consider a
14 policy of forgiveness of late fees imposed during the Pandemic, particularly lower
15 income customers.

16 Q. PLEASE RESPOND TO MR. PACKER'S REBUTTAL TESTIMONY IN WHICH HE
17 ARGUES IN SUPPORT OF AQUA'S PERFORMANCE FACTOR RECOGNITION.

18 A. Mr. Packer's list of performance criteria does not include any customer service
19 performance criteria, yet he cites to proceedings that explicitly included such
20 performance criteria as the basis for the Commission's approval of a performance-based

1 incentive.[1] As a result, my findings of Aqua's failure to meet certain customer service
2 performance standards as required by the Settlement in the Aqua-Peoples merger,[2] as
3 well as the lack of any documentation of improved customer service performance as a
4 result of the Section 1329 Acquisitions, should be taken into account when considering
5 Aqua's proposal that its "exemplary management effectiveness"[3] be considered in the
6 determination of the Return on Equity on this proceeding.

7 Q. TURNING TO MS. BLACK'S REBUTTAL ON YOUR SPECIFIC CUSTOMER
8 SERVICE PERFORMANCE ISSUES, PLEASE RESPOND TO HER EVIDENCE AND
9 ARGUMENT ON THE CALL CENTER PERFORMANCE.

10 A. Ms. Black argues that it is appropriate to use the "aggregate" percentage of calls
11 answered to measure the obligation in the Settlement to answer at least 82% of the
12 customer calls within 30 seconds on an annual basis. This measurement includes all calls
13 answered by the IVR, that is, all the calls made to the Company's toll-free telephone
14 number with an automated menu of options for customers to choose. However, the
15 obligation should be measured only by the instances when the customer chooses the
16 option to speak to a live customer service representative. While Ms. Black claims that
17 the "aggregate" measurement is "appropriate,"[4] she offers no evidence to support this
18 claim from the perspective of the customer's experience or the Settlement itself, which

[1] Aqua St. No. 1-R at 29, citing to the PPL Electric 2012 rate case and UGI Electric 2017 rate case. Mr. Packer's summaries of the criteria for both these rate cases included consideration of customer service performance, customer satisfaction, and customer contact performance.
[2] Joint Petition for Approval of Non-Unanimous, Complete Settlement Among Most Parties, Docket Nos. A-2018-3006061, A-2018-3006062, and A-2018-3006063 (June 26, 2019) (Aqua-Peoples Merger)
[3] Aqua St. No. 1-R at 26, line 18.
[4] Aqua St. No. 10-R at 16, line 1.

1 does not refer to the "aggregate" measurement. Viewed from the perspective of
2 customers who seek to speak to a customer representative, Aqua's call center
3 performance has failed to meet the Settlement's standard. As documented in my Exhibit
4 BA-2 attached to my Direct Testimony, the annual calls answered average for 2019 was
5 70.56%, for 2020 was 72.86%, and for 2021 through July was 50.64%.

6 Regarding the Call Abandonment performance standard, Ms. Black states that the
7 failure to meet the 2020 standard of 4% or less was due to December 2020 delays in
8 delivery Aqua bills and the resulting large volume of calls at the end of 2020.[5] Her
9 testimony does not reflect the very high abandonment rate (compared to the required
10 annual average standard) of over 9% for the month of November 2020 and the average of
11 over 10% for December 2020. Therefore, it is unlikely that one week in late December
12 as relied upon by Ms. Black to excuse not meeting the annual average was the only basis
13 for the failure to meet the annual standard. Nor does her testimony respond to the
14 historical and ongoing failure to meet a reasonable annual abandonment rate
15 performance: 4.56% in 2019, 4.32% in 2020, and a very significant deterioration in 2021
16 with a rate of 13.15% through July.[6] Again, Ms. Black's reliance on "aggregate"
17 averages should be rejected because it does not reflect the customer's experience in
18 trying to reach the call center representatives.

19 Q. DOES MS. BLACK OFFER ANY EVIDENCE TO JUSTIFY AQUA'S LOW
20 CUSTOMER SATISFACTION SCORES?

[5] Aqua St. No. 10-R at 17, lines 1-6.
[6] Exhibit BA-2 attached to my Direct Testimony provides monthly and annual averages of the actual customer experience for each of these performance standards.

A. No. While she claims that service level and abandonment rate "do not directly impact customer satisfaction scores,"[7] she offers no analysis of why the Aqua's customer satisfaction scores are lower than electric and natural gas companies. Furthermore, her claim that customer satisfaction scores are not impacted by a customer's experience with the call center is not a reasonable statement since Aqua does not have any walk-in customer service centers in Pennsylvania and the vast majority of customer interactions with Aqua occur through the use of the toll-free telephone number and the call center.

Q. WITH REGARD TO THE OBLIGATION TO CONDUCT A "ROOT CAUSE ANALYSIS" OF CUSTOMER COMPLAINTS, HOW DO YOU RESPOND TO MS. BLACK'S REBUTTAL?

A. Ms. Black's Rebuttal Testimony continues to rely on a spreadsheet of customer complaint data as evidence of a "root cause analysis." As explained in my Direct Testimony, a spreadsheet is not a "root cause analysis." Rather, a spreadsheet is evidence to be considered and evaluated as part of a Root Cause Analysis (RCA). Based on the typical approach outlined in publications of the American Society for Quality (ASQ),[8] the following steps are usually required to conduct a Root Cause Analysis:

- Define the event or deviation that triggered the RCA;
- Find causes, identifying a broad range of potential causes of the problem;
- Find the root cause, zooming in on the main culprit;
- Find solutions to solve the problem and prevent the event from reoccurring;

[7] Aqua St. No. 10-R at 17, lines 11-15.
[8] https://asq.org/quality-resources/root-cause-analysis

- Take action implementing solutions to ensure that "things stay that way;"
- Measure and assess to determine whether the solution(s) work and solved the problem.

Once acceptable solutions are identified, the next step requires action to be taken to implement the solution. An implementation plan requires a timetable for specific actions with identified "owners," identification of responsibilities, and deadlines to monitor the results.[9]

Q. ARE YOU FAMILIAR WITH OTHER UTILITIES THAT HAVE CONDUCTED A ROOT CAUSE ANALYSIS OF CUSTOMER COMPLAINTS AND SERVICE QUALITY PERFORMANCE?

A. Yes. The Public Service Commission of the District of Columbia ordered Washington Gas Light Co. to conduct a root cause analysis as Merger Condition No. 75 in Commission Order No. 19396[10] approving the merger between Washington Gas Light Company and AltaGas Ltd. WGL was required to conduct a root cause analysis based on ASQ principles to assess customer satisfaction issues:

> Customer Service Root Cause Analysis: consistent with American Society for Quality (ASQ) principles, Washington Gas shall be required to have a root cause analysis (RCA) conducted of performance categories not meeting established service levels, and develop an action plan to improve Washington Gas' overall customer satisfaction scores in the deficient categories. The RCA shall investigate service level deficiencies that may include billing, SAP and eService system reliability and customer service. The analysis also must provide a solution or action plan to improve service

[9] Among the many publications available on how to conduct an RCA, *See Root Cause Analysis: A Tool for Total Quality Management.* Wilson, Paul F.; Dell, Larry D.; Anderson, Gaylord F. (1993). Milwaukee, Wisconsin: ASQ Quality Press. pp.92-98. ISBN 0-87389-163-5.

[10] *Formal Case No 1142, In the Matter of the Merger of AltaGas Ltd. and WGL Holdings, Inc. ("Formal Case No. 1142")*.

levels by linking appropriate performance metrics/initiatives to the primary cause identified in the RCA. An independent ASQ-certified professional with expertise in root-cause analyses will perform the RCA. Washington gas will file this analysis and action plan with the District of Columbia Public Service Commission no later than twelve (12) months after Merger Close and provide interested parties with the opportunity to comment on the RCA. Washington Gas shall apply the documented and recommended solution(s) after a review period, not to exceed six months. The costs incurred by Washington Gas in preparing and filing the RCA will not be recovered from District of Columbia Customers in Washington Gas' rates.

I evaluated that RCA on behalf of the District of Columbia's Office of People's Counsel.[11] Prior to the WGL RCA, I performed a similar analysis of an RCA prepared by Potomac Electric Co. on behalf of the Office of People's Counsel.[12]

Q. HAS AQUA CONDUCTED A ROOT CAUSE ANALYSIS AS REQUIRED BY THE SETTLEMENT?

A. No.

Q. DID AQUA COMPLY WITH THE SETTLEMENT CONDITION TO REDUCE ITS RESPONSE TIME TO CUSTOMER COMPLAINTS?

Q. No. Ms. Black's Rebuttal does not discuss why Aqua did not meet its requirement to reach an average of no more than 10 days to respond to customer complaints, but only points to recent improvement in this regard. This provision of the Settlement was not met.

Q. DID MS. BLACK'S RESPONSE TO THE HIGH JUSTIFIED COMPLAINT RATIO

[11] Affidavit of Barbara R. Alexander, Analysis of Washington Gas Light Co. Root Cause Analysis Report, on behalf of the Office of the People's Counsel of the District of Columbia, submitted to the Public Service Commission in Formal Case No. 1142 (October 2020).

[12] Alexander, Barbara, Analysis and Evaluation of PEPCO's Supplemental Root-Cause Analysis Report: District of Columbia Customer Satisfaction prepared for the District of Columbia Office of People's Counsel and submitted to the D.C. Public Service Commission in Formal Case No. 1119 (January 2018)

1 FOR AQUA PROVIDE ANY EVIDENCE OF HOW AQUA'S CALL CENTER STAFF
2 COMPLIES WITH PENNSYLVANIA REQUIREMENTS?
3 A. No. Ms. Black refers to a supplemental response to OCA-IX-36 as evidence of how
4 Aqua monitors customer service performance by its call center employees.[13] However,
5 this supplemental response does not reflect any oversight or monitoring of call center
6 staff for compliance with Pennsylvania regulations and policies.[14] This document
7 focuses solely on standard training of call center staff to engage with customers in a
8 polite and satisfactory manner to ensure that the customer's issues are handled in a
9 professional manner. In other words, these training materials, while valuable, do not
10 respond to the specific consumer protection requirements of Pennsylvania law and
11 regulations. As such, Ms. Black has not responded to the substantive issues raised in my
12 Direct Testimony on this concern and I continue to recommend that Aqua be required to
13 submit a plan that documents an audit and/or oversight process of their call center to
14 ensure compliance with Pennsylvania-specific consumer protection policies and
15 requirements. To be clear, the issue here is not the lack of training materials that reflect
16 Pennsylvania requirements. Aqua provided those training materials in its response to
17 OCA-I-2. Rather, the issue I have raised is the lack of internal auditing or oversight to
18 ensure compliance with those training materials that are Pennsylvania-specific. I found
19 no evidence that Aqua has a program in place to undertake a regular review of
20 compliance with those training materials. Such a regular review and oversight would

[13] Aqua St. No. 10-R at 19, lines 14-22.
[14] I attach this supplemental data response as Exhibit BA-8.

also help in the investigation of whether Justified Complaints and complaint trends can identify the need for reforms and additional training.

Q. DID MS. BLACK RESPOND SATISFACTORILY TO YOUR CONCERN ABOUT THE LACK OF TRAINING OF ITS FIELD PERSONNEL IN THE IMPLEMENTATION OF PENNSYLVANIA'S TERMINATION POLICIES?

A. No. Ms. Black states that field personnel are required to attempt contact with the customer immediately prior to termination of service but offers no evidence that this requirement is implemented. The lack of any written training materials on this essential consumer protection and associated obligations that must be met if contact is made with certain situations is disturbing. Ms. Black agreed that the training materials should be "updated" to make it clear that personal contact is required but did not actually provide written materials with her testimony.[15] Therefore, I continue to include this recommendation as set forth in my Direct Testimony.

Q. WITH REGARD TO THE OBLIGATIONS ASSOCIATED WITH RECONNECTION OF SERVICE, DID MS. BLACK OFFER EVIDENCE THAT THE CHAPTER 56 REGULATIONS ARE BEING PROPERLY IMPLEMENTED?

A. No. Ms. Black acknowledges the applicability of the Commission's reconnection of service regulations and states that Aqua does comply with those regulations.[16] However, the issue I have raised is that Aqua's system treats a request for service at a location 15 days after a termination for nonpayment occurred as a "move in" request for new service.

[15] Aqua St. No. 10-R at 20, lines 15-16.
[16] Aqua St. No. 10-R at 21, lines 16-21.

There is discovery pending to determine how Aqua's system fully complies with the reconnection of service rights and remedies under this circumstance. Until that is shown, however, I maintain my recommendation that Aqua revise its procedures and document compliance with restoration of service rights and remedies when customers seek reconnection at the same location.

Q. WITH REGARD TO DOCUMENTING CUSTOMER DISPUTES, MS. BLACK STATES THAT AQUA DOES ASK IF THE CUSTOMER IS SATISFIED WITH THE CALL. DO YOU AGREE?

A. No. Ms. Black refers to Aqua's training documents on handling customer disputes as reflected in the response to OCA-I-2(5). This document does not explicitly require Aqua's customer service representatives to ask the customer if he/she is satisfied with the Company's response to their question or call. Rather, the document states:

> Introduction
> A dispute is when the customer indicates they are not satisfied with the resulting resolution/explanation pertaining to the subject of the bill.
> Details
> 1. We will consider it a dispute in all states when the CSR has followed Aqua's policies and procedures and is still not able to resolve the issue to the customer's satisfaction.
> 2. We will consider it a dispute if further action is required to resolve the issue, such as creating a service order, creating an EWQ task, or calling another office.
> 3. It is not a dispute if the customer requests to speak to a supervisor (even if a Supervisor Callback email is created).

I did not see any instruction to the customer service representative to affirmatively inquire if the customer is satisfied with the resolution or explanation of their call in every instance or even when the call is more narrowly "pertaining to the subject of the bill." Rather, this instruction appears to rely on the customer to express their dissatisfaction without such a prompt. Furthermore, I do not agree that a communication is not a dispute

if the customer asks to speak with a supervisor (even if a Supervisor Callback email is created). Such a request is typically viewed as a dispute.

Q. MS. BLACK REJECTS YOUR PROPOSAL TO MOVE TO IMPLEMENT NO-FEE PAYMENT OPTIONS. PLEASE COMMENT.

A. Ms. Black continues to assert that the fee for certain payment options is not charged by Aqua but by Speedpay. However, the fee-based pay option is promoted by and widely advertised by Aqua. It is a payment option authorized explicitly by Aqua and is referenced in its bills and web portal. Furthermore, the fee is subject to a contract between Aqua and Speedpay and other payment providers authorized by Aqua. It is disingenuous for Aqua to distinguish its payment options in this manner. The issue remains whether Aqua could or should improve its customer service by promoting no-fee payment options as Pittsburgh Water and Sewer Authority and Pennsylvania American Water Co. have recently agreed to do to their benefit. I continue to make this recommendation with the understanding that it is not a regulatory requirement but a proposal for improved customer service and that might not result in higher costs to ratepayers if ratepayers shifted from using potentially more expensive mail and in-person payment options, the costs of which are included in rates now.

Q. WITH RESPECT TO CHARGING LATE FEES DURING THE TERMINATION MORATORIUM DURING THE PANDEMIC, HOW DO YOU RESPOND TO MS. BLACK'S STATEMENT THAT CUSTOMERS WERE INFORMED OF THIS OBLIGATION?

A. Ms. Black states that customers were informed of their continuing obligation to pay late

fees even though termination was halted. She points to the monthly bills where late fees were included. She also points to pandemic-specific communications to customers. However, the communication she attaches to her Rebuttal as Exhibit RFB-3R does not inform customers of their obligation to continue making payments that will accrue late fees. Rather, it is designed to promote customers to call Aqua to negotiate payment plans. While those communications may be reasonable, the lack of any information on the termination moratorium and the continued charging of late fees on overdue bills is conspicuously missing from any Aqua communications during the Pandemic. As a result, I continue to recommend that Aqua reconsider its position on charging late fees to its customers, particularly low income customers, during the termination moratorium required by the Pandemic.

Q. DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?

A. Yes. However, I reserve the right to supplement this testimony based on my review of responses to pending discovery requests.

Witness: Georgetta Parisi-Knup
Date: October 27, 2021
Updated: December 1, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET IX

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-IX-36: How does Aqua PA determine that its call center staffing complies with Pennsylvania regulations governing water and wastewater service? Please describe the process to conduct oversight for compliance and any results of such evaluations since January 2019.

RESPONSE: Call center training for staff is ongoing and CSRs are trained on the PA regulations. In addition to initial training, calls are monitored and individual CSRs are reviewed and coached on an ongoing basis. For specific regulations, many compliance related matters are built into the billing system (ex. billing cycle, collection notices and process). Aqua PA monitors and participates in PUC proceedings where regulations may be updated or changed that could impact the call center and this information is relayed and training is performed as necessary. In addition, Aqua customer service staff are in communication with PUC BCS staff and have an open communication if a particular rule or regulation may be interpreted differently.

Company has an ongoing quality evaluation program whereby all CSRs are assessed on their performance and compliance with all operational procedures including Pennsylvania regulations. See attachment OCA-IX-36 for the CSR evaluation form.

ACO Call Evaluation Form & Definitions

Introduction

Process details what items are scored during a call evaluation performed by the Quality Assurance team. A pdf version of the form and definitions can be found here:

- New Evaluation Definition Packet-2019
- Updated ACO Call Center Evaluation Form

Details

ITEM #	Evaluation Question	Definition
Foundation Skills - 15 Points Total		
1.a.	Call Opening: Use Proper Greeting "Good Morning/Afternoon Aqua, this is or my name is ____ ; How may I help you?"	1. The opening greeting must include AQUA and the CSR's name.
1.b.	Customer Verification: Confirms service address, emergency contacts, caller is an authorized representative for the account.	1. Identity the name on the Banner account (screen pop should already identify customer premises and account information when call is received by CSR) 2. Confirm service address, emergency contacts, caller is an authorized representative for the account. 3. CSR must verify the name on the account as well as the name of the caller. 4. When verifying Aqua CSR must advise the customer of record why the emergency contact information is needed via phone#, Text or email. 5. CSR must verify/update the customer's email address with every call for Customer Experience Program (Customer Survey). If the customer refuses to provide that information, the Cust note in Banner needs to be updated with that information. 6. CSR **must** use the Customer' name on **every** Call Type. It is up to the CSR's discretion as to where

		the name will be used. It can be used at the beginning, middle, or end of the call A. You must make at least one attempt to address the Customer by their name, even if it is a difficult name to pronounce
1.c.	Closing: "Thank you for calling Aqua , are you satisfied with the service provided today"?	1. The CSR must brand the at the end and ask the customer if they're satisfied with the service provided.
Finesse Skills		
2.a	Issue Diagnosis: Understanding the customers issues and identify the right solution.	**Expert** We demonstrate attentiveness to the caller, ask for clarity, confirms understanding of the question or issue. **Advanced** • We use verbal cues and proactively ask questions to better understand customer situations. • We always confirm with the customer that our understanding of the issue is accurate. **Effective** • We fully understand what customers tell us and take that information at the face value and attempt to find solutions to those issues. • We can clearly identify the real reason for an issue and explore the needs that have arisen. **Emerging** • We act on some of the clues or needs that customers have articulated, but still tend to miss a lot of important information. • We are beginning to become familiar with common issues, can sometime recognize them in the moment. **Novice** • We miss crucial information that customers provide, forget to ask clarifying questions to make

		sure we completely understand issues. • We frequently jump to conclusions, relying on our "best guess" for what customers have asked and try to provide to those questions. • We may make customer s feel inept for asking about common issues, even hinting at the fact the answer is an obvious one.
2.b	Internal Navigation: Knowing what resources are available and using that to solve the customers issue. Examples of internal channels/resources include: Banner, Knowledge Owl, Aqua Online, Western Union Speedpay,One View, AMRA, Floor Support and Supervisors.	**Expert** We have mastered navigating internal channels and know where to find and share specific information. **Advanced** • We are skilled at using internal communication channels to quickly find specific, targeted information both during calls and at other times. • We are comfortable with the intricacies of internal channels without relying on external guidance. **Effective** • We regularly check and use internal channels to stay updated on relevant information. • We take advantage of internal communication platforms to resolve questions we have during customer interactions. **Emerging** • We can use internal channels to look up information. • We know how to contribute information to communication platforms. • We still have questions about system intricacies and are not able to find the information we need quickly.

		Novice • We understand the importance of using internal knowledge management platform to provide customers with quick and reliable service. • We know what the main internal communication platforms and channels are, but we are not completely comfortable with navigating them on our own.
		Expert • We are completely efficient at handling customer calls and attempt to answer any customers as we can. • We have learned how to effectively allocate time between simple and complex calls, spending more time on harder issues by saving time on easier ones. • We consistently manage customer conversations to mutually beneficial outcomes. **Advanced** • We handle calls with speed but don't sacrifice quality in the service we provide. We very seldom "rush" customers off the phone. • We spend enough time to diagnose the customers' root cause issues, and quickly provide appropriate solutions. **Effective** • We have a natural call flow and sound confident when speaking with customers. • We do engage in small talk with customers, but keep the conversation related to the customers' issues and sometimes use the information to serve them better. • 1-time Dead air over 10 seconds

2.c	Call Management: Handling the customer issues effectively and efficiently.	**Emerging**
		• Our customers steer conversations in directions that could have been avoided.
		• We sometimes become distracted and take extra time checking information that's not relevant to the issue at hand.
		• We engage in small talk with the customers, but rarely use the information we gather for helping resolve their issue.
		• 2 Times Dead air over 10 seconds
		
		Novice
		• Our customers have full control of the call throughout.
		• We have an overly casual tone or calls have frequent, long silences without explanation.
		• We get bogged down by details and become sidetracked, and as a result, we take longer than necessary to complete the calls.
		• For simple issues, we handle them and tend to "rush" customers off the phone.
		• Hold time over 2 minutes
		  ○ **Moment of silence statement**
		  ▪ Mr. /Mrs. Customer you will hear brief silence while I, set up your account/payment arrangement/schedule your appointment, etc…"
		  ▪ Moment of Silence is not to exceed 1 minute.
		  ▪ Moment of Silence can only be used 2 times on the same call.

		• 3 times or more Dead air over 10 seconds
2.d.	Issue Resolution: Providing a complete and accurate solution to the customers' issue/concerns to prevent future calls for the same issue	**Expert** • We have mastered the technique of asking questions and guiding the conversation to resolve each customers' specific request. • We add value to customer interactions by resolving their problems quickly and with precision. • We not only deal with the customers' current problems but preempt future issues as well. **Advanced** • We efficiently guide customer when possible to tailored, effective issue resolution. • We integrate meaningful questions that will help with issue resolution in the flow of conversation with customers. **Effective** • We consistently resolve customers' issues fully, during the course of a single service interaction • We strategically ask questions to uncover information that will help us solve the customers' problem. • We can provide customers with information that is specific and appropriate for their problem. **Emerging** • We know when to ask key questions to gain information from the customer. • We have a working knowledge of a wide range of issue types and the related solutions that can be

		offered. • We direct customer to generic solutions without specifically addressing the customer's issue. **Novice** • We understand what complete issue resolution is and that it is the goal of the customer interaction. • We generally fail to pick up on customer cues that can assist with the resolution.
2.e.	Communication/Confidence: Speaking clearly, confident and logically so the customer understands what we're doing, how we're helping and what we say is accurate	**Expert** • We speak very clearly and logically so the customer understands how we can help them. • We take care to explain everything in detail when the customer sounds confused. • After lengthier conversations, we summarize main points at the end, so the customer remembers clearly the step taken. **Advanced** • We clearly articulate the majority of our explanations when we talk to the customer. • ◦ We seldom rush parts of the call when the customer sounds unclear. **Effective** • We use clear language and speaking styles to help the customer understand the issue. • We realize when the customer is confused and sometimes try to address them. • We ask the customer if he/she fully understands our responses before moving on to the next issue. **Emerging**

		• We speak logically but till stray from the main point at times. • We start to realize when the customers seem unclear about policies and make efforts to explain them. **Novice** • We are not succinct in our speaking style and frequently take too long to get to the answer. • We provide solutions to the customer, but do not take the extra time to explain them in greater detail. • We cannot pick up on instances when the customer has not fully understood an issue. • We are not aware of the customer's language and communication levels and do not flex our communication style accordingly.
		Expert • Consistently and naturally incorporates below advanced techniques in all customer interactions. • Has demonstrated a mastery of all components of active listening over time. **Advanced** • Creates two-way, collaborative conversations with customers. • Accurately and concisely paraphrases the customer's words throughout the conversation to ensure mutual understanding. • Is fully engaged and able to make sense of customer conversations by confirming, questioning, and summarizing throughout the interaction.

2.f.	Active Listening : Making full use of the information the customer shares in their conversation to accurately and promptly resolve their issues.	• Remains objective, approaching each interaction with an open mind. **Effective** • Provides verbal reassurance to the customer by asking clarifying questions. • Is able to recognize and self-correct signs of conversational disengagement in the moment. • Rarely needs to ask the customer to repeat information. • Puts customers at ease by allowing them time to express themselves. **Emerging** • Begins to demonstrate empathy in customer interactions. • Strives to demonstrate patience but may still hurry the customer off the phone. • Rarely needs to ask the customer to repeat information. • Tends to make assumptions about customer issues, treating some customer issues as though they've "heard it before". **Novice** • Is familiar with active listening concepts and methods. • Recognizes personal signs of conversation disengagement and takes steps to remain consistently attentive. • Often need to ask the customer to repeat information. • Rushes or interrupts the customer in some instance and may seem impatient at times.

2.g.	Positive Language: Manages the tone of the conversation by employing positive language throughout the call.	**Expert** • Has mastered the use of positive language in place of negative words. **Advanced** • Consistently and purposefully practices replacing negative language with equivalent positive words and phrases-even in scenarios not practiced in training or role plays. • May still use negative words/phrases on rare occasions but can recognize and self-correct mistakes in-the-moment. • Begins with what can be done to help the customer, instead of leading with the bad news. • Responds to customers positively without being affected by hostile customers and/or stress. **Effective** • Has eliminated the most common negative words/phrases (no, can't won't) from customer conversation. • Needs to work on eliminating "hidden" negative words/phrases that are less explicitly negative but still drive customer effort. • For Example, may tend to explain the "bad news" first by beginning with "unfortunately". **Emerging** • Has made strides in reducing use of negative language, but still consciously focused on avoiding particular words and phrases. • May resort to using negative tone and/or language with particularly difficult customers or in times of stress. • Recognized personal habits and use of negative

		language and has taken steps to replace these words/phrases with positive equivalents. **Novice** • Is familiar with positive language concepts and methods • Often uses negative words with customer (no, can't, won't) • Has difficulty recognizing his/her own use of negative language and likely needs guidance to correct.
	Educate: Proactively looking for ways of providing callers with non-internal	**Expert** • We take advantage of every appropriate opportunity to teach the customer something new about our services. • We proactively look for ways we can make the customer's future interactions easier, even if it does not impact the way we resolve the customer's issue today. **Advanced** • We can identify appropriate times to teach customers something new about our service functionality. • We do not just complete tasks for the customer, but share our process and teach them what he/she could do on their own in the future (to either self-resolve or avoid the issue altogether) **Effective** • We try to identify suitable times to educate the customer, can do so without missing main key opportunities.

2.h	information, skills and tools needed to become a more informed Aqua customer.	• We share information with the customer when it is relevant to his/her issue at hand. **Emerging** • We realize the need to share information with the customer, but do not always educate at the most appropriate times (when the customer is in a hurry or after the issue has been resolved) • We teach the customer how to resolve his/her issues but only after he/she directly ask. • Educate the customer without using Aqua jargon. **Novice** • We address the immediate issue the customer calls about and make no attempt to teach the customer about future steps. • We perform tasks to resolve the customer's issue but do not take the time to teach or explain our process. • We are aware of the different tools and functions we have available, but do not proactively share that information with the customer.
Privacy Control		
3.a	Did the agent pause the call for privacy to obtain the payment information? Did the agent resume the recording after the payment taken? Did the agent pause the recording for any other reason other than to obtain payment information?	Did the CSR pause the call for privacy to obtain the payment information? Yes 25.00 NO -25.00 N/A 25.00

Related Articles

Revision History

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Barbara R. Alexander, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 6-SR, 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: December 14, 2021 Signature: DocuSigned by: Barbara R. Alexander 8D0E58CA47E24C2...

*320953

Barbara R. Alexander

Consultant Address: Barbara Alexander Consulting, LLC
83 Wedgewood Drive
Winthrop, Maine 04364

OCA Statement 7SR

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
	:	Docket No. R-2021-3027385
v.	:	
	:	Docket No. R-2021-3027386
AQUA PA PENNSYLVANIA, INC. WATER AND WASTEWATER	:	

SURREBUTTAL TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

DECEMBER 14, 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, HAVE YOU ALREADY SUBMITTED TESTIMONY IN THIS PROCEEDING ON BEHALF OF THE OFFICE OF CONSUMER ADVOCATE?

A. Yes. I submitted direct and supplemental direct testimony.

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 Todd M. Duerr, Aqua Statement No. 9-R, regarding unaccounted for water (UFW), pressure surveys, isolation valves, fire hydrants, flushing the distribution system, PFAS reporting, customer complaint logs, and customer complaints.

UNACCOUNTED FOR WATER

Q. WHAT IS AQUA'S POSITION ON UFW?

A. Mr. Duerr states that: (1) It is incorrect to compare "Water Supplied" from AWWA Audits with "Total Water Delivered" in PUC Section 500 Form; (2) objects to Aqua using the same data base for filling out PUC Section 500 Form, AWWA Audits and Chapter 110 Reports submitted to Pennsylvania Department of Environmental Protection (DEP); and (3) objects to submitting separate Schedule 500 reports for each operating division.[1]

[1] Aqua Statement No. 9-R, pp. 2-4.

Q. DO YOU AGREE OR DISAGREE WITH AQUA'S POSITION ON UFW STATED ABOVE?

A. The following responses are in the same numerical order as Aqua's position noted above.

1. I disagree; "Water Supplied" from AWWA Audits should be the same as "Total Water Delivered" on PUC Section 500. Both represent the total water delivered to the distribution system. In preparing the AWWA Audits, Aqua elected to increase the total water delivered to the distribution system by 2% to account for metering error, but did not do the same for PUC Schedule 500.

2. I disagree; Aqua should use the same data base for reporting volumes on the PUC Section 500 Form, AWWA Audits; and DEP Chapter 110 Reports. The total volume of sales should be the same reported for three reports. The non-revenue water reported should be the same for the PUC Section 500 form and AWWA audits. It is understood that the DEP Chapter 110 Reports requires reporting the volume of water withdrawn from the sources instead of delivered to the distribution system and should not be used for calculating UFW or Non-revenue water that is delivered to the distribution system.

3. I disagree; for large water companies like Aqua, combining the information on unconnected water systems on a single Section 500 form makes it impossible to provide proper oversight of each separate system during a base rate case. The PUC Section 500 Form is necessary for providing regulatory oversight of Aqua's separate water systems and is less burdensome for Aqua than requiring the Company to provide an AWWA audit for each separate water system.

PRESSURES AND PRESSURE SURVEYS

Q. WHAT IS AQUA'S POSITION ON PRESSURES AND PRESSURE SURVEYS?

A. Mr. Duerr states that: (1) he disagrees with my statement that Aqua is not in compliance with Commission regulations; (2) he disagrees that the intent of the Commissions regulations require that high and low pressure readings should be taken at representative points where the high and low pressures are likely to occur; (3) it is not necessary to submit a category of pressure complaints; (4) in future base rate cases, Aqua will highlight the pressure issues in the Water Complaint logs; (5) Aqua has completed main replacement projects that will increase pressure for fire flow and reliability of the system; (6) the Commission does not have the authority to award damages resulting from high pressures; (7) the Commission's regulations specifically allow for furnishing water service outside the stated psi ranges where adequate service could not be provided to any customer or where engineering practices would dictate a higher or lower pressure; (8) Aqua's tariff requires customers to install a pressure reducing valve if the distribution pressure exceed 80 pounds per square inch (psi); and (9) it is common in the water industry to have pressures higher than 125 psi in order to adequately serve customers.[2]

Q. DO YOU AGREE OR DISAGREE WITH AQUA'S POSITION ON PRESSURES AND PRESSURE SURVEYS STATED ABOVE?

[2] Aqua Statement No. 9-R, pp. 5-11.

A. The following responses are in the same numerical order as Aqua's position noted above.

1. I disagree; Aqua is not in compliance with 52 Pa. Code § 65.6(d) because it did not submit a single pressure survey for any of its pressure zones.

2. I disagree; by using the word "representative," the Commission clearly intended that high and low pressure readings should be taken at points located near where the highest and lowest pressures are likely to occur. This is both logical and consistent with my experience.

3. I disagree; if Aqua wants pressure information obtained from hydraulic computer models and SCADA systems to be substituted for pressure surveys, it should provide a complete complaint log that includes all customer pressure complaints. That way, as discussed in my direct testimony, there is a check on the use of the computer models and SCADA systems. The complaint log will indicate if the pressure complaints are due to correctable issues with Company or customer facilities or that the hydraulic computer model or SCADA system needs to be modified.

4. I agree; but only highlighting the pressure issues in complaint logs, without recording pressure complaints as a separate, searchable, category of "pressure" complaints in the complaint log as I recommend, would have not been helpful in finding the complaint of 190 to 200 psi pressure causing damage to a customer in Chesterbrook because that complaint was not included in the Complaint Log submitted by Aqua. It should be noted that the complaint log submitted referred to

"Order Numbers" instead of "Complaint Numbers" indicating that the log may have been a work order log sanitized to be a customer complaint log.

5. I agree that main replacements will increase fire flow and increase pressure in during high water use but will not decrease high pressures.

6. I agree that the Commission does not have the authority to award damages; however Aqua has twice paid damages to the customer referred to in (4) above for damage caused by high pressures.

7. I agree; however Aqua has only made general statements and has not provided any documentation showing that it is good engineer practice to furnish water service to some customers at 190 to 200 psi so that it could provide service to other customers at normal pressures.

8. I agree; however since Aqua elected to serve customers with normal pressures greater than 125 psi, Aqua should be required to reduce pressure below 125 psi upstream of the customers' service lines thereby protecting the customers' pressure reducing valves (PRVs) and plumbing. This may require Aqua to install PRVs upstream of each service line or install a low pressure main with an Aqua PRV connected to the distribution system serving those customers with high pressures.

9. I agree; however it should be documented that the decision to serve customers at pressures higher than 125 psi was based on good engineering judgement and no reasonable alternative was available. It is common that customer's PRVs fail. If Aqua is providing 190 to 200 psi to the customer, and the customer's PRV fails in an open position, the customer is subject to considerably

more damage at 190 to 200 psi than if Aqua is providing 125 psi to the customer's PRV.

Q. WHAT ARE YOUR RECOMMENDATIONS CONCERNING PRESSURES AND PRESSURE SURVEYS?

A. Because the Complaint/Work Oder Log submitted by Aqua did not include the complaint regarding 190 to 200 psi pressure experienced by the Chesterbrook customer mentioned in (4) above, I recommend that, going forward, Aqua either begin recording pressure complaints, including high pressure complaints, as a separate, searchable, category of "pressure" complaints in the complaint log or provide a pressure survey that estimates the highest and lowest normal pressures experienced in each of its distribution systems pressure zones. Otherwise, the Commission and interested stakeholders do not know how many other customers are subject to very high pressures.

ISOLATION VALVES

Q. WHAT IS AQUA'S POSITION ON ISOLATION VALVES?

A. Mr. Duerr states that: (1) Aqua should not be required to exercise 16,700 valves per year until all isolation valves have been exercised in a 5-year period because Aqua has made previous commitments to the Commission to inspect and exercise all non-critical valves over a 12-year period[3]; (2) Aqua has inspected critical valves regularly and began tracking and recording the inspection of critical valves in 2017;

[3] Aqua Pennsylvania, Inc., Peoples Natural Gas Company LLC, Peoples Gas Company LLC, Management and Operations Audit, Issued April 2021, pp. 86-88 (Management and Operations Audit).

and (3) making different commitments to a separate agency is inefficient and redundant.[4]

Q. DO YOU AGREE WITH AQUA'S POSITION ON ISOLATION VALVES STATED ABOVE?

A. I agree, in part. In response to Commissioner Yanora's Directed Questions, Aqua indicated that it exercises critical valves no less than once every four years. It is my opinion that this schedule for critical valves is reasonable, but I maintain my recommendation that critical isolation valves should be repaired or replaced as soon as practicable after the time they are found to be inoperable.

For the other 83,277 non-critical valves, however, I continue to recommend that a 5-year exercising schedule is reasonable. It is my opinion that delaying exercising valves for an additional seven years will result in more valves requiring expensive repairs or replacement. Based on Mr. Duerr's testimony and my review of the implementation plan, the Commission has not yet reviewed or approved a specific replacement time for non-critical valves and Aqua has not provided support for the longer 12-year exercising schedule.

Regarding Aqua's concern about inefficiency and redundancy if it were required to submit its annual report to the Commission and a separate report to the OCA containing a schedule for replacing/repairing non-critical valves that could not be exercised during the prior year (and were not repaired/replaced at the time they were found), I suggest that Aqua include the requested schedule in its annual

[4] Aqua Statement No. 9-R, pp. 11-14.

follow-up to the Company's management audit implementation plan and copy that submission to the OCA.

FIRE HYDRANTS

Q. WHAT IS AQUA'S POSITION ON FIRE HYDRANTS THAT CANNOT PROVIDE FIRE FLOW OF 500 GPM AT 20 PSI?

A. According to Mr. Duerr, Aqua will attempt to either find alternative locations for these hydrants or remove them within the next three years.[5]

Q. DO YOU AGREE WITH AQUA'S POSITION ON FIRE HYDRANTS THAT CANNOT PROVIDE FIRE FLOW OF 500 GPM AT 20 PSI?

A. I agree if the hydrants will be marked so that they will only be used for flushing and blow-offs until they are moved or replaced.

FLUSHING THE SEPA DISTRIBUTION SYSTEM

Q. WHAT IS AQUA'S POSITION ON FLUSHING THE DISTRIBUTION SYSTEM?

A. Mr. Duerr states that: (1) Aqua disagrees that they should flush the entire SEPA system every three years; (2) Aqua disagrees that the Water Complaint log for the SEPA system is incomplete; (3) the work orders for flushing the SEPA system generated due to complaints are not the only reason for the work orders related to flushing; (4) flushing is somewhat disruptive to customers and can result in significant non-revenue water volume; (5) for a system the size of SEPA, a flushing

[5] Aqua Statement No. 9-R, pp. 14.

program should be developed based on system water quality sustainment, which is what the Company has done; Aqua's SEPA flushing process considers many factors including water quality samples, customer issues, the geometry of the system (if mains are looped); volume of water traversing through an area on a daily basis; and proximity to wells and tanks; and (6) Aqua has a strong record of sustaining water quality in the SEPA system through its current practices.[6]

Q. DO YOU AGREE OR DISAGREE WITH AQUA'S POSITION ON FLUSHING THE DISTRIBUTION SYSTEM ABOVE?

A. The following responses are in the same numerical order as Aqua's position noted above.

(1) I disagree because it is likely that regularly flushing the entire system would proactively eliminate many customer complaints. The majority (approximately 58.7%) of the 2,635 customer complaint work orders for the SEPA system concerned flushing in response to customer complaints. And Aqua added another 2,400+ flushing work orders for the SEPA system that were not related to customer complaints. Aqua's objection to flushing the entire system every three years may be because an effective flushing program is not possible since many of the non-critical isolation valves are not operable.

(2) I disagree; it is clear the Complaint/Work Oder Log for the water systems is incomplete because it did not include the Chesterbrook customer complaint of 190

[6] Aqua Statement No. 9-R, pp. 15-18.

to 200 psi pressure. If Aqua intends to use a work order log as a complaint log, it should submit the entire work order log.

(3) I agree that there are other reasons for flushing than customer complaints.

(4) I agree, but as I stated previously, it is my opinion that regular flushing should help to prevent future complaints. Flushing avoids build-up on the inside of the water mains that may discolor the water, increases low pressures by improving the carrying capacity of the pipes and ensures proper operation of distribution system components such as fire hydrants.

(5) I agree; however flushing the entire system on a regular basis should be included as part of the program based on system water quality sustainment, as I explained above.

(6) I agree; however, Aqua's record of sustaining water quality in the SEPA system appears to be too dependent on customer complaints rather than proactive maintenance of its systems.

PFAS REPORTING

Q. WHAT IS AQUA'S POSITION ON PFAS REPORTING?

A. Mr. Duerr testified that Aqua agrees to include clarifying comments on its website regarding the reasons that it ceased testing at certain sites.[7]

Q. DO YOU AGREE WITH AQUA'S POSITION ON PFAS REPORTING?

A. Yes.

[7] Aqua Statement No. 9-R, pp.18-19.

CUSTOMER COMPLAINT LOGS

Q. WHAT IS AQUA'S POSITION ON CUSTOMER COMPLAINT LOGS?

A. Mr. Duerr testified that (1) my concerns of incomplete complaint logs based on flushing work orders alone is unwarranted and (2) Aqua recently provided Confidential Complaint Logs to the OCA with names and addresses.[8]

Q. DO YOU AGREE WITH AQUA'S POSITION CUSTOMER COMPLAINT LOGS?

A. I do not agree that Aqua submitted a complete complaint log for its water system. In my direct testimony, I expressed concerns that the complaint log was incomplete with regard to flushing that Mr. Duerr clarified and addressed in his rebuttal testimony. However; the water complaint log is not complete on other issues. As I have discussed above in this testimony, a complete complaint log is necessary for substituting hydraulic computer models and SCADA systems for pressure surveys and the submitted water complaint logs did not include the Chesterbrook water customer's complaint of 190 to 200 psi pressure. The Chesterbrook customer's contacts with Aqua prior to filing Informal and Formal Complaints were not included in the complaint log. This supports my concern that Aqua did not submit a complete complaint log for its water systems.

Mr. Duerr also noted that there were additional flushing work orders that were not included in the complaint log because they did not result from a customer's complaint. That indicates that a work order log may have been sanitized into a complaint log. If Aqua intends to use a work order log as a complaint log, the log

[8] Aqua Statement No. 9-R, pp. 19-20.

should include all customers' complaints (including multiple complaints by the same customer) regarding quality of service issues whether or not a work order is warranted.

I agree that, on December 1, 2021, Aqua provided confidential complaint logs which included customer names and addresses in updated responses to OCA discovery. This addresses one of the concerns that I raised in my direct testimony and helps identify the area and scope of the distribution system involved in the customer complaint.

FORMAL COMPLAINTS, LETTERS TO THE PUC AND OCA, PIH TESTIMONY REGARDING QUALITY OF SERVICE ISSUES

Q. DID THE COMPANY ADDRESS THE FORMAL COMPLAINTS, LETTERS TO THE PUC AND OCA, AND PIH TESTIMONY REGARDING QUALITY OF SERVICE ISSUES THAT YOU IDENTIFIED IN YOUR SUPPLEMENTAL DIRECT TESTIMONY?

A. Yes. On pages 20 through 26 of his rebuttal testimony, Mr. Duerr addressed those customers' complaints and the PIH testimony that concerned quality of service issues.

Q. DO YOU HAVE ANY COMMENTS ON MR. DUERR'S RESPONSES?

A. Aqua has contacted or attempted to contact those customers and Mr. Duerr provided information on Aqua's interaction with each customer. In my opinion

Aqua has properly responded to each customer's complaint or testimony related to quality of service issues.

Q. DO YOU HAVE ANY RECOMMENDATIONS?

A. Yes. I recommend that Aqua be required to provide documentation justifying the reasons why some Chesterbrook customers are receiving 190 to 200 psi normal pressures and why no reasonable alternative is available.

AQUA'S RESPONSE TO COMMISSIONER YANORA'S QUESTIONS

Q. HAVE YOU REVIEWED AQUA'S RESPONSES TO COMMISSIONER'S YANORA'S QUESTIONS?

A. Yes. Aqua's responses are included in Exhibit TMD-4R of Mr. Duerr's rebuttal testimony. I have reviewed Aqua's responses and have no comments in addition to what I have discussed above regarding isolation valves.

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.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3027385 (Water)
v.	:	C-2021-3028466 (Water)
	:	R-2021-3027386 (WW)
Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
Pennsylvania Wastewater, Inc.	:	

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 7-SR, 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: December 14, 2021 Signature: _____
*320954 Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	Docket Nos. R-2021-3027385 (Water)
	v.	:	C-2021-3028466 (Water)
		:	R-2021-3027386 (WW)
	Aqua Pennsylvania, Inc. and Aqua	:	C-2021-3028467 (WW)
	Pennsylvania Wastewater, Inc.	:	

LIST OF THE EVIDENCE OFFERED BY THE OFFICE OF CONSUMER ADVOCATE

The Office of Consumer Advocate (OCA) intends to introduce the following evidence into the record in the above-captioned proceedings at the hearings scheduled for December 20-22, 2021. All testimony is accompanied by the signed verification of the OCA's witness.

OCA Statement 1, Direct Testimony of Ralph C. Smith

Attachment RCS-1

Exhibit LA-1 (Schedules A, A-1, B, B-1, C, C-1, D)

Exhibit LA-2 (Schedules B-1 through B-3 and Schedules C-1 through C-18)

Exhibit LA-3

Exhibit LA-4 (Highly Confidential)

OCA Statement 1SR, Surrebuttal Testimony of Ralph C. Smith[1]

Exhibit LA-5 (Schedules A, A-1, B, B-1, C, C-1, D)

Exhibit LA-6 (Schedules B-1 through B-5 and Schedules C-1 through C-20)

Exhibit LA-7

Exhibit LA-8

[1] An errata to OCA Statement 1SR was filed on December 17, 2021.

OCA Statement 2, Direct Testimony of Morgan N. DeAngelo

Appendix A

OCA Statement 2SR, Surrebuttal Testimony of Morgan N. DeAngelo

OCA Statement 3, Direct Testimony of David J. Garrett[2]

Appendix A

Appendix B

Exhibits DJG-1 through DJG-17

OCA Statement 3SR, Surrebuttal Testimony of David J. Garrett

OCA Statement 4, Direct Testimony of Glenn A. Watkins[3]

Schedules GAW-1 through GAW-8

Schedule GAW-9 (Highly Confidential)

OCA Statement 4 Supp., Supplement Direct Testimony of Glenn A. Watkins

OCA Statement 4R, Rebuttal Testimony of Glenn A. Watkins

OCA Statement 4SR, Surrebuttal Testimony of Glenn A. Watkins

Schedule GAW-1SR

Schedule GAW-2SR (Highly Confidential)

OCA Statement 5, Direct Testimony of Roger D. Colton

Schedule RDC-1

Schedule RDC-2

Appendix

OCA Statement 5SR, Surrebuttal Testimony of Roger D. Colton

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[2] An errata to OCA Statement 3 was filed on December 3, 2021.

[3] An errata to OCA Statement 4 was filed on November 12, 2021.

OCA Statement 6, Direct Testimony of Barbara R. Alexander

Exhibits BA-1 through BA-7

OCA Statement 6SR, Surrebuttal Testimony of Barbara R. Alexander

Exhibit BA-8

OCA Statement 7, Direct Testimony of Terry L. Fought

Exhibits TLF-1W through TLF-9W

Exhibit TLF-1WW

Exhibit TLF-2WW

Appendix A

OCA Statement 7 Supp., Supplemental Direct Testimony of Terry L. Fought

OCA Statement 7SR, Surrebuttal Testimony of Terry L. Fought

OCA Hearing Exhibit 1

List of the Evidence Offered by the Office of Consumer Advocate

OCA Hearing Exhibit 2

Aqua Responses to OCA Interrogatories, served 12/17/21[4]

[4] Separately, Aqua will submit its witnesses' verifications for these responses.

Witness: William C. Packer
Date: December 17, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-1: With reference to the performance categories identified by Mr. Packer as the basis for his recommendation for "superior" management performance [See e.g., Mr. Packer's Rebuttal at 26], does he agree that these categories do not include customer service performance measured by call center performance, complaint handling, regulatory compliance, or other categories discussed in Ms. Alexander's Direct Testimony? If Mr. Packer does not agree, please identify the specific customer service performance areas that he seeks to have recognized as "superior" and the basis for why Aqua's performance exceeds or is better than other Pennsylvania public utilities. Referring to the amount identified in the response to OCA-XI-6(b), identify the amounts that Aqua PA has recorded by account.

RESPONSE: Yes. The categories in Mr. Packer's rebuttal testimony do not include those categories identified by Ms. Alexander in her direct testimony relative to customer service performance.

Witness: Rita F. Black
Date: December 17, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-4: Please provide the call center statistics for each week of December 2020 (abandonment rate, call answering metrics for asking to speak to a customer service representative).

RESPONSE: See electronic Attachment OCA-XVII-4-December 2020 Call Center Metrics

Date	2020 CSR Daily Service Level	2020 CSR Daily Abandoned Rate	YTD Abanon % as of Date
12/31/2020	76.7%	2.0%	4.6%
12/30/2020	4.3%	29.2%	4.6%
12/29/2020	8.3%	31.6%	4.4%
12/28/2020	6.9%	29.7%	4.1%
12/27/2020			3.9%
12/26/2020			3.9%
12/25/2020			3.9%
12/24/2020	97.2%	1.1%	3.9%
12/23/2020	89.3%	1.2%	3.9%
12/22/2020	94.4%	0.7%	3.9%
12/21/2020	78.1%	1.6%	4.0%
12/20/2020			4.0%
12/19/2020			4.0%
12/18/2020	94.5%	0.7%	4.0%
12/17/2020	93.4%	1.1%	4.0%
12/16/2020	97.0%	0.7%	4.0%
12/15/2020	94.5%	0.8%	4.0%
12/14/2020	52.5%	3.5%	4.0%
12/13/2020			4.0%
12/12/2020			4.0%
12/11/2020	94.2%	0.9%	4.0%
12/10/2020	95.0%	0.8%	4.0%
12/9/2020	91.0%	1.8%	4.0%
12/8/2020	87.0%	1.1%	4.0%
12/7/2020	91.2%	1.1%	4.1%
12/6/2020			4.1%
12/5/2020			4.1%
12/4/2020	89.4%	1.8%	4.1%
12/3/2020	92.1%	1.4%	4.1%
12/2/2020	49.2%	6.5%	4.1%
12/1/2020	6.0%	27.3%	4.1%

Witness: Rita F. Black
Date: December 17, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-6: Does Ms. Black agree that the "abandonment rate" measures the calls that are abandoned by customers after they enter the queue to speak to a customer service representative?

RESPONSE: The abandonment rate reported by the Company measures the calls that are abandoned by customers after they enter the queue from the IVR to speak to a customer service representative.

Witness: Rita F. Black
Date: December 17, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-7: Please identify all the automated service options identified on Aqua's IVR that a customer can select.

RESPONSE: The automated service options identified on Aqua's IVR offer a customer the option to check the balance on his/her account, make a payment on an account and to request to speak to a customer service representative.

Witness: Rita F. Black
Date:

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-8: Reference Ms. Black's Rebuttal at 17, is it Ms. Black's opinion that the spreadsheet of customer complaints constitutes a "root cause analysis" of complaint trends and underlying causes? In your response, please discuss Ms. Black's understanding of and familiarity with the literature on the meaning of a "root cause analysis."

RESPONSE: The spreadsheet that is in development by Aqua PA with input from OCA is not in itself root cause analysis. It is, however, a means to organize information on customer complaints to identify and prioritize issues that are ripe for root cause analysis. Root cause analysis is an appropriate mechanism to evaluate the reason for the issue (employee error, system error, process or procedure shortfall, etc.) and to determine how best to prevent future incidents (coaching, training, revision of procedures, modifications to the customer information system, etc.). Root cause analysis occurs informally in every case received by the Company as the employee answering the complaint must analyze the reason for the complaint and take steps to ensure resolution, not just for that case alone, but for other potential cases.

Ms. Black has extensive knowledge of root cause analysis from her career at the Peoples Companies. She has been employed in a number of roles across the customer service, regulatory and universal service program areas. To highlight a few of these positions, she worked as a Business Analyst responsible for developing system requirements, based on root cause analysis, for implementation to the customer information system. She spent 13 years as a Senior Rates Analyst, regularly incorporating root cause analysis principles into her daily work. Further, she has utilized her root cause analysis skills in her oversight of compliance functions for the Peoples Companies.

Witness: Rita F. Black
Date:

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-9: Reference Ms. Black's Rebuttal at 18, line 5, please define "formalizing the RCA function."

RESPONSE: As noted in the referenced testimony on page 17, Aqua PA has been working with OCA on development of the components of the spreadsheet that will be used to track complaints for the purposes of root cause analysis. Implementing this spreadsheet is one step in formalizing the root cause analysis function as it is the Company's intention to use this spreadsheet to identify trends for analysis and remediation.

Witness: Rita F. Black
Date: December 17, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-11: Is the "quality evaluation program" referenced by Ms. Black on her Rebuttal at page 20, lines 5-6 the same as the supplemental response to OCA-IX-36? If not, please provide any documentation of the "evaluation program."

RESPONSE: The supplemental response to OCA-IX-36 is the evaluation form and criteria used when monitoring CSR performance.

Witness: Rita F. Black
Date: December 17, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-12: Reference Ms. Black's Rebuttal at 20, lines 14-16. When will the Company updated its documentation of how its field personnel comply with the obligation to attempt personal contact prior to termination of service?

RESPONSE: The Company is currently in the process of updating the documentation for its Field Service Representatives and plans to have it completed in the next 30 days.

Witness: Rita F. Black
Date: December 17, 2021

AQUA PENNSYLVANIA, INC.
AQUA PENNSYLVANIA WASTEWATER, INC.

OFFICE OF CONSUMER ADVOCATE

DATA REQUEST SET XVII

DOCKET NOS. R-2021-3027385 & R-2021-3027386

OCA-XVII-13: Please provide the materials for how field personnel are currently trained to handle the attempt at personal contact and how to respond to the substance of customer contact if achieved.

RESPONSE: The Field Service Representatives (FSR) are instructed to attempt personal contact at the time of termination. If a customer notifies the FSR that they have a confirmed payment, medical issue or open dispute the FSR is to contact his/her supervisor to confirm the information and upon verification of the information the termination will not occur.