Application of Pennsylvania-American Water Company for Acquisition of the Wastewater Assets of the Borough of Kane Authority
66 Pa. C.S. § 1329
Application Filing Checklist – Water/Wastewater
Docket No. A-2019-3014248

5. Provide copies of two independent appraisals by separate utility valuation experts for use in establishing the fair market value of the Selling Utility.

RESPONSE: See enclosed appraisals performed by Jerome C. Weinert, P.E., Principal and Director for AUS Consultants on behalf of Pennsylvania-American Water Company ("PAWC") at **Appendix A-5.1** and by Harold Walker III, Manager – Financial Studies for Gannett Fleming Valuation and Rate Consultants, LLC. on behalf of the Borough of Kane Authority ("Authority") at **Appendix A-5.2**.

Jerome C. Weinert
Principal & Director

AUS Consultants
Depreciation and Valuation
8555 West Forest Home Avenue
Suite 201
Greenfield, WI 53228
Telephone 414-529-5755
Fax 414-529-5750
E-Mail weinertj@auswest.net

November 7, 2019

Mr. Scott D. Fogelsanger
Senior Manager - Business Development
Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

RE: Borough of Kane Authority's Wastewater System for Market Value Appraisal

Enclosed is AUS Consultants' fair market value appraisal report for Borough of Kane Authority's wastewater system as of September 30, 2019 prepared for Pennsylvania American Water Company. The report was prepared based on the 2018-2019 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PA CS) Paragraph 1329 "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission.

Based on our appraisal the Fair Market Value of Borough of Kane Authority's wastewater system's property, plant, and equipment operating as Pennsylvania rate regulated wastewater utility is $24,491,405 determined based on the cost, income, and market approaches to value, as detailed in the following table:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach				
Financials' Net Book (3-31-2019)				
Gross Book		20,035,634		
Accumulated Depreciatiomn		10,249,417		
Net Book		9,825,885		
Inventory of Assets (7-2019)				
Original Cost ($OC)		21,023,527		
Depreciated Original Cost ($OCLD)		12,070,455		
Replacement Cost (9-30-2019)				
Replacement Cost New (COR)		55,539,558		
Depreciated Replacement Cost New (CORLD)	**$**	**29,015,055**		
Cost Approach Conclusion		**29,015,055**	**50%**	**14,507,528**
Income Approach				
Required Rate Increases: 25% period 2; 20% period 5; 15% period 9; 10% period 12; 10% period 15; 6% period 18 (Input 6)		17,980,846		
Income Approach Conclusion		**17,980,846**	**40%**	**7,192,338**
Market Approach				
Market Comparables (to)				
OCLD		21,932,017		
CORLD		27,915,385		
Market Financials (to)				
OCLD		24,503,024		
Market Approach Conclusion		**27,915,385**	**10%**	**2,791,539**
Appraisal Conclusion	**$**	**24,491,405**	**100%**	**24,491,405**
Conclusion (cost approach)	**$**	**29,015,055**		

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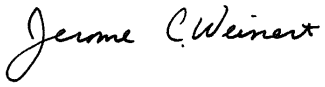
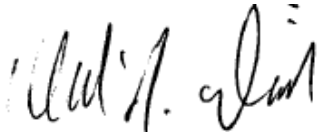
As the purpose of this appraisal was to fulfill the requirements of Act 12 in the establishment of value for rate making of the Borough of Kane Authority's wastewater utility's property, plant and equipment the appraisal's conclusion of $24,491,405 is consistent with the purpose of this appraisal. As the cost approach work papers details our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property this detail it can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

Respectfully Submitted,
AUS Consultants, Depreciation & Valuation
By:

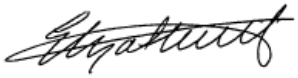


Jerome C. Weinert, AM, P.E., CDP
Principal and Director

David A. Sheffer
Principal



Michael J. Diedrich, ASA, P.E., CDP
Certified General Appraiser
Principal



Elizabeth A. Weinert
Associate

November 7, 2019

ASA: Accredited Senior Appraiser in the Machinery and Equipment (Public Utilities) discipline of the American Society of Appraisers
AM: Accredited Member Appraiser in the Machinery and Equipment (Public Utilities) discipline of the American Society of Appraisers
P.E.: Registered Professional Engineer State of Wisconsin
CDP: Certified Depreciation Professions in the Society of Depreciation Professionals

Enclosures

AUS CONSULTANTS

Borough of Kane Authority's (Pennsylvania) Wastewater System

Fair Market Value Appraisal Report
As of September 30, 2019
for
Pennsylvania American Water Company

AUS Consultants
Depreciation and Depreciation
8555 West Forest Home Avenue Suite 201
Greenfield, Wisconsin 53228
Office: 414-529-5755
Cell: 414-698-8371
E-Mail: weinertj@auswest.net

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November 7, 2019

Pennsylvania American Water Company
Mechanicsburg, Pennsylvania

AUS Consultants
Depreciation and Valuation
8555 West Forest Home Avenue
Suite 201
Greenfield, WI 53228
Telephone 414-529-5755
Fax 414-529-5750
Cell 414-698-8371
E-Mail weinertj@auswest.net

RE: Fair Market Value Appraisal of the Borough of Kane Authority's (Pennsylvania) Wastewater System

Enclosed is AUS Consultant's fair market value appraisal report of the Borough of Kane Authority's (Pennsylvania) wastewater system as of September 30, 2019 prepared for our client Pennsylvania American Water Company (PAWC). The report was prepared based on the 2018-2019 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated (PA CS) Statues Section 1329 "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission.

Based on our appraisal, the Fair Market Value of the Borough of Kane Authority's (Pennsylvania) wastewater system's property, plant, and equipment operating as Pennsylvania rate regulated wastewater utility is $24,491,405 determined based on the cost, income, and market approaches to value, as detailed in the following table:

AUS CONSULTANTS

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
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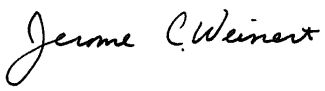
Appraisal Conclusion	**$**	**24,491,405**	**100%**	**24,491,405**
Conclusion (cost approach)	**$**	**29,015,055**		

AUS CONSULTANTS

As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the Borough of Kane Authority's wastewater system property, plant and equipment this appraisal's conclusion of $24,491,405 is consistent with the purpose of the appraisal. As the cost approach work papers details our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property this detail it can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

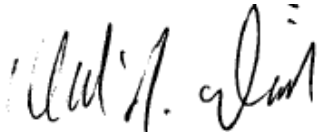
Respectfully Submitted,

AUS Consultants, Depreciation & Valuation
By:



Jerome C. Weinert, AM, P.E., CDP
Principal and Director

David A. Sheffer
Principal



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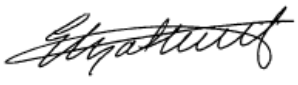

AUS CONSULTANTS

Elizabeth A. Weinert
Associate

November 7, 2019

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P.E.: Registered Professional Engineer State of Wisconsin
CDP: Certified Depreciation Professions in the Society of Depreciation Professionals

APPRAISAL CERTIFICATION
for the Fair Market Appraisal of
The Borough of Kane Authority's Pennsylvania's Sanitary Wastewater System
As of September 30, 2019
Prepared for
Pennsylvania American Water Company

AUS Consultants, Depreciation & Valuation, certifies that, to the best of its knowledge and belief:

- The statements of fact contained in this report are true and correct.

- Over the last three years, AUS Consultants has appraised these properties.

- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- Neither AUS Consultants, Depreciation & Valuation, nor its professional staff has no present or prospective interest in the property that is the subject of this report and has no personal interest with respect to the parties involved.

- Neither AUS Consultants, Depreciation & Valuation, nor its professional staff has any bias with respect to the property that is the subject of this report or to the parties involved.

- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

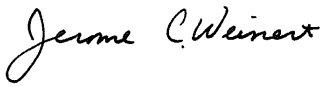
- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice 2018-2019 Edition.

- The signers of this report has made personal inspections of the property that is the subject of this report.

- No individuals provided significant professional assistance to the persons signing this report. However, Scott Fogelsanger of Pennsylvania American Wastewater Company provided assistance in obtaining information and data from the Borough of Kane Authority Pennsylvania and the Engineer's Assessment report prepared by Gannett Fleming which was the inventory starting point of the Cost Approach.

AUS CONSULTANTS

AUS Consultants, Depreciation & Valuation
By:



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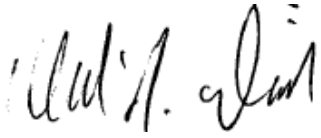

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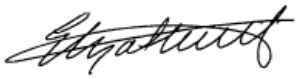


Elizabeth A. Weinert
Associate

November 7, 2019

AUS CONSULTANTS

NARRATIVE REPORT

AUS CONSULTANTS

EXECUTIVE SUMMARY

The purpose of this value appraisal is the determination of the fair market value of the property plant and equipment of the Borough of Kane Authority's wastewater system for our client Pennsylvania American Water Company. The report was prepared based on the 2018-2019 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues Paragraph 1329: "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12) and the Pennsylvania Public Utility Commission's Final Implementation Order M-2016-2543193 adopted October 27, 2016. The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission (PA PUC).

The value established in this appraisal was based on the definition of Market Value as:

> *"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 14th Edition, page 58.*

In arriving at our opinion of value of the Borough of Kane Authority's wastewater system's property, plant, and equipment as it is operated as an investor-owned Pennsylvania PUC rate regulated wastewater utility the cost, income, and market approaches to value were considered. Detailed explanations of each approach to value are included below in the section "Appraisal Procedures and Results". The following summarizes the data, analysis and conclusions of each of those valuation approaches.

Cost Approach - The philosophy in the cost approach to value is that the maximum value of a property's tangible assets is established by the cost to acquire or build a similar property. In this appraisal, the cost approach to value was analyzed using reproduction/replacement cost approach.

Reproduction cost and replacement cost are defined as:

> Reproduction cost – "Reproduction cost is the estimated cost to construct, as of the effective appraisal date, an exact duplicate or replica of the building [property] being appraised, insofar as possible, using the same materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, super-adequacies, and obsolescence of the subject improvements [property]."[1]
>
> Replacement cost – "Replacement cost is the estimated cost to construct, as of the effective appraisal date, a substitute for the building [property] being appraised using contemporary materials, standards, design and layout. When this cost basis is used, some existing obsolescence in the property may be cured. Replacement cost may be the only alternative if reproduction cost cannot be estimated"[2]
>
> In the wastewater industry the property's reproduction costs and replacement costs are quite similar; therefore, the property's cost new was determined based on its replacement cost new estimated by the trended original cost and the inventory-unit cost methods.

The trended original cost method was utilized in preparing the replacement cost new. "Trending is a method of estimating a property's replacement cost new in which an *index* or *trend factor* is applied to the property's *historical costs* to convert the known historical costs into an indication of current (appraisal date) costs. Simply put, trending reflects the movement of price over time."[3] In the trended original cost method, Kane's investment in wastewater collection plant and equipment is restated to costs reflective of the appraisal date, by the application of cost trends to the property's original investment. AUS Consultants utilized the Engineer's Assessment performed by Gannett Fleming (Engineer's Assessment tab) as the starting point of the Cost Approach. Utilizing the Engineer's Assessment AUS Consultant developed the Borough of Kane Authority's original cost less depreciation (OCLD) and replacement cost less depreciation (CORLD) in property, plant and equipment at September 30, 2019 (Cost Approach tab).

The cost trends were applied to each of the Borough of Kane Authority's various investment categories (NARUC plant accounts) by original year of placement for that

[1] The Appraisal of Real Estate, 14th Edition. pages 569-570
[2] Ibid, page 570
[3] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Third Edition. Page 50

investment. The cost indexes used in these studies were the Handy-Whitman Index of Public Utility Construction Costs for the water industry in the northeastern region of the United States which includes the Commonwealth of Pennsylvania, the AUS General Plant Indexes, and various United States Bureau of Labor Statistics (US BLS) indexes as detailed in the following table:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.00	Land & Land Rights	USBLS	PPI	3.00	USBLS3	1.00
354.00	Stuctures & Improvements	HW	W-1	15.00	HWW-115	1.00
360.00	Mains Force	HW	W-1	44.00	HWW-144	1.00
361.00	Mains Gravity	HW	W-1	44.00	HWW-144	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00
364.00	Flow Measuring Devices	HW	W-1	40.00	HWW-140	1.00
371.00	Pumping Equipment	HW	W-1	9.00	HWW-19	1.00
380.00	Treatment and Disposal Equipment	HW	W-1	17.00	HWW-117	1.00
381.00	Plant Sewers	HW	W-1	17.00	HWW-117	1.00
389.00	Other Plant & Misc Equip	HW	W-1	17.00	HWW-117	1.00
391.00	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00
392.00	Stores Equipment	AUS	T-1	7.00	AUST-17	1.00
393.00	Tools, Shop, & Garage Equipment	AUS	T-1	7.00	AUST-17	1.00
394.00	Laboratory Equipment	AUS	T-1	7.00	AUST-17	1.00
395.00	Power Operated Equipment	AUS	T-1	8.00	AUST-18	1.00
396.00	Communications Equipment	USBLS	PPI	2.00	USBLS2	1.00
397.00	Miscellaneous Equipment	AUS	T-1	8.00	AUST-18	1.00

Using the trended original cost method, the Borough of Kane's investment in plant, property and equipment of $21,023,527 was determined to have a reproduction cost new of $55,539,568 as summarized in the following table:

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

0.00

Replacement Cost New (RCN)

1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6	7	8	9 (9)	10 (10)	11 (11)	12 (12)	13 (13)	14 (14)	15 (15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	16 (16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Replacement Cost New (COR)	
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input								Input							
Eng Assmnt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Code(10) & (5)	Cost Indices Lookup Code(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	353.00	Land & Land Rights						34,237.24	USBLS3			1.835	62,825.34	1.000	62,825.34
	354.00	Structures & Improvements						9,477,073.12	HWW-115			2.233	21,158,500.80	1.000	21,158,500.80
	360.00	Collection Sewers - Force						434,111.13	HWW-144			2.098	910,913.98	1.000	910,913.98
	361.00	Collection Sewers - Gravity						5,587,425.86	HWW-144			3.127	17,472,483.03	1.000	17,472,483.03
	363.00	Services to Customers						218,609.50	HWW-139			2.127	464,964.06	1.000	464,964.06
	364.00	Flow Measuring Devices						25,321.55	HWW-140			1.932	48,914.86	1.000	48,914.86
	371.00	Pumping Equipment						941,801.06	HWW-19			2.595	2,443,932.69	1.000	2,443,932.69
	380.00	Wastewater and Disposal Equipment						3,003,588.67	HWW-117			3.371	10,126,485.78	1.000	10,126,485.78
	381.00	Treatment Plant Sewers						1,093,509.61	HWW-117			2.382	2,604,456.84	1.000	2,604,456.84
	389.00	Other Plant and Misc Equipment						580.00	HWW-117			2.087	1,210.46	1.000	1,210.46
	390.00	Office Furniture and Equipment						34,642.35	AUST-115			1.190	41,209.98	1.000	41,209.98
	391.00	Transportation Equipment						52,227.32	AUST-14			1.065	55,626.18	1.000	55,626.18
	392.00	Stores Equipment						10,000.00	AUST-17			1.058	10,580.00	1.000	10,580.00
	393.00	Tools, Shop, and Garage Equipment						81,973.95	AUST-17			1.268	103,909.72	1.000	103,909.72
	394.00	Laboratory Equipment						7,029.79	AUST-17			1.498	10,529.65	1.000	10,529.65
	395.00	Power Operated Equipment						4,065.00	AUST-18			1.091	4,434.92	1.000	4,434.92
	396.00	Communications Equipment						10,375.61	USBLS2			0.951	9,866.83	1.000	9,866.83
	397.00	Miscellaneous Equipment						6,955.60	AUST-18			1.253	8,713.03	1.000	8,713.03
Grand Total	**Grand Total**	**Grand Total**						**21,023,527.36**				2.642	**55,539,558.15**	1.000	**55,539,558.15**

Replacement Cost New Less Depreciation - The replacement cost described above reflects the cost of new property; however, the Borough of Kane Authority's wastewater collection system property is not new and has experienced normal depreciation and potentially functional and/or economic obsolescence. These various forms of depreciation are defined as follows:

> Normal depreciation/deterioration, akin to physical deterioration, is "loss in value caused by wear, tear, age and use."[4]
>
> Functional obsolescence is "the loss in value or usefulness of a property caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient of less costly replacement property that new technology has developed."[5]
>
> Economic, or external, obsolescence is defined as "a loss in value caused by factors outside a property"[6] and is most often indicated by insufficient earning.

Based on our experience in regard to water and wastewater depreciation studies and our analysis of the Borough of Kane Authority's wastewater collection system operating performance; we found that the Borough of Kane Authority's wastewater utility's property

[4] The Dictionary of Real Estate Appraisal, 4th Edition
[5] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.
[6] The Appraisal of Real Estate, 13th Edition, page 442.

experiences normal depreciation but not any significant functional obsolescence; economic obsolescence is best evaluated after the results of the income and market approaches to values are determined (see Cost Approach Revisited).

In order to ascertain the service lives of the various types of the Borough of Kane Authority's property, plant and equipment, we considered AUS Consultants' past water and wastewater depreciation studies and documentation provided by the Borough of Kane Authority. Through our experience and the above described information, the following normal depreciation parameters of survival/retirement characteristics and service lives were determined for Kane's wastewater system property:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.00	Land & Land Rights	Non-Depr	0.00	0.00%	Non-Depr	0.00
354.00	Stuctures & Improvements	R4.0	55.00	0.00%	MACRS	25.00
360.00	Mains Force	R3.0	60.00	0.00%	MACRS	25.00
361.00	Mains Gravity	R3.0	75.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	55.00	0.00%	MACRS	25.00
364.00	Flow Measuring Devices	R3.0	35.00	0.00%	MACRS	25.00
371.00	Pumping Equipment	R3.0	35.00	0.00%	MACRS	25.00
380.00	Treatment and Disposal Equipment	R3.0	45.00	0.00%	MACRS	25.00
381.00	Plant Sewers	R3.0	45.00	0.00%	MACRS	25.00
389.00	Other Plant & Misc Equip	R3.0	45.00	0.00%	MACRS	25.00
391.00	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00
392.00	Stores Equipment	R3.0	35.00	0.00%	MACRS	25.00
393.00	Tools, Shop, & Garage Equipment	R3.0	35.00	0.00%	MACRS	25.00
394.00	Laboratory Equipment	R3.0	20.00	0.00%	MACRS	20.00
395.00	Power Operated Equipment	R3.0	15.00	0.00%	MACRS	15.00
396.00	Communications Equipment	R3.0	12.00	0.00%	MACRS	12.00
397.00	Miscellaneous Equipment	R3.0	20.00	0.00%	MACRS	20.00

Normal Depreciation – The extent of the normal depreciation in the property was evaluated using age-life depreciation techniques. In age-life depreciation, the property's depreciation or condition is estimated using the following formulas:

$$\text{Depreciation (\%)} = \frac{\text{Age (years)} \times 100\%}{\text{Service Life (years)}}$$

Condition (%) = Remaining Life (years) x (100%)
Service Life (years)

where: the property's Service Life = Age + Remaining Life and
Remaining Life = *f*(Survival Characteristic, Service Life, and Age)

When the above depreciation lives are used to quantify the property's depreciation is applied to the replacement cost new (COR) of $55,539,568 the resultant COR less normal depreciation (CORLD) was found to be $29,015,055 detailed as follows:

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New less Depreciation (RCNLD)

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Lookup Iowa Curves Life Tables @ col (26)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.0	Land & Land Rights		23.25	62,825.34	Non-Depr	0.00				23.25	23.25	100.00%	62,825.34	1,460,689.00	1,460,689.00	1,460,689.00	-
354.0	Structures & Improvements		23.71	21,158,500.80	R4.0	55.00				31.76	55.46	57.26%	12,114,945.13	501,642,135.00	671,909,981.00	1,173,552,072.00	1,163,717,588.00
360.0	Collection Sewers - Force		23.51	910,913.98	R3.0	60.00				37.94	61.45	61.75%	562,456.38	21,419,383.00	34,560,646.00	55,980,028.00	54,654,838.00
361.0	Collection Sewers - Gravity		35.95	17,472,483.03	R3.0	75.00				42.40	78.35	54.63%	9,544,842.17	628,202,263.00	740,813,751.00	1,369,016,008.00	1,310,436,247.00
363.0	Services to Customers		23.53	464,964.06	R3.0	55.00				33.05	56.58	58.41%	271,576.39	10,942,616.00	15,366,178.00	26,308,794.00	25,573,024.00
364.0	Flow Measuring Devices		19.83	48,914.86	R3.0	35.00				17.16	36.99	46.71%	22,846.47	969,994.00	839,211.00	1,809,206.00	1,712,021.00
371.0	Pumping Equipment		21.42	2,443,932.69	R3.0	35.00				15.89	37.32	42.81%	1,046,187.33	52,359,384.00	38,845,914.00	91,205,296.00	85,537,649.00
380.0	Wastewater and Disposal Equipment		32.15	10,126,485.78	R3.0	45.00				18.17	50.32	37.96%	3,843,952.28	325,586,007.00	183,963,770.00	509,549,779.00	455,691,864.00
381.0	Treatment Plant Sewers		21.15	2,604,456.84	R3.0	45.00				25.41	46.56	54.66%	1,423,704.62	55,084,244.00	66,173,952.00	121,258,198.00	117,200,559.00
389.0	Other Plant and Misc Equipment		16.25	1,210.46	R3.0	45.00				29.64	45.89	64.59%	781.83	19,670.00	35,878.00	55,548.00	54,471.00
390.0	Office Furniture and Equipment		13.65	41,209.98	R3.0	12.00				2.70	16.35	20.20%	8,325.62	562,532.00	111,395.00	673,929.00	494,520.00
391.0	Transportation Equipment		12.01	55,626.18	R3.0	10.00				4.00	16.01	39.54%	21,996.48	668,166.00	222,384.00	890,551.00	556,262.00
392.0	Stores Equipment		2.25	10,580.00	R3.0	35.00				32.94	35.19	93.61%	9,903.53	23,805.00	348,505.00	372,310.00	370,300.00
393.0	Tools, Shop, and Garage Equipment		12.21	103,909.72	R3.0	35.00				23.68	35.89	66.33%	68,918.37	1,269,022.00	2,460,586.00	3,729,606.00	3,636,840.00
394.0	Laboratory Equipment		19.05	10,529.65	R3.0	20.00				4.85	23.91	21.05%	2,216.42	200,628.00	51,104.00	251,731.00	210,594.00
395.0	Power Operated Equipment		5.25	4,434.92	R3.0	15.00				10.01	15.26	65.60%	2,909.14	23,283.00	44,394.00	67,677.00	66,524.00
396.0	Communications Equipment		7.77	9,866.83	R3.0	12.00				5.94	13.70	47.78%	4,714.06	76,634.00	58,571.00	135,203.00	118,402.00
397.0	Miscellaneous Equipment		18.58	8,713.03	R3.0	20.00				5.12	23.70	22.42%	1,953.55	161,869.00	44,632.00	206,502.00	174,261.00
Grand Total			28.82	**55,539,558.15**		57.98				31.64	60.43	52.24%	**29,015,055.11**	**1,600,672,324.00**	**1,757,311,541.00**	**3,356,523,127.00**	**3,220,205,964.00**

The preliminary cost approach to value of the Borough of Kane Authority's wastewater system property was found to $29,015,055.

Income Approach

The income approach to value establishes the value of the property based on its economic returns. There are two generally accepted procedures in performing an income analysis: the direct capitalization of anticipated income, and the discounted cash flow procedures.

In the direct capitalization approach, anticipated earnings are capitalized directly into value using a market-required capitalization rate. The Borough of Kane Authority's

wastewater system's operation will be moving from a municipal operation, wherein economic returns are not the primary objective of the operation to a private (investor owned) rate regulated sewer utility operation in which economic returns are one of the objectives of the operation; therefore, the direct capitalization of earnings approach was not utilized in this appraisal.

In the discounted cash flow (DCF) approach, the property's economic returns are forecast for future periods. The cash flows (debt-free after-tax net cash flows) from operations are discounted to the appraisal date using a market derived discount rate resulting in the DCF approach's income indicator of value. Use of the DCF approach allows the appraiser to address the property's historical operating experience and its migration, in future periods, to an operation as a rate regulated income taxed (local, state, and federal) operation; thus, making the DCF approach preferable in this case.

In preparing this appraisal's DCF analysis (Income Approach tab) first the results from the Borough of Kane Authority's wastewater utility's operations were evaluated based on an analysis of historical operating performances over the period 2013 through 2019 (Financials tab) resulting in operating statistics such as revenues and their growth, various operating expenses stated as function of their typical drivers (revenues, plant investment, income from operations, etc.). Next, the results of future periods operations were forecast based on the migration of the Borough of Kane Authority's historical operations over time to operations of the wastewater operation similar to a public investor-owned water/wastewater utility. Finally, the resultant cash flows from future period operations on the Borough of Kane Authority's wastewater system were discounted to the appraisal date using a market derived discount rate for a public investor-owned water/wastewater utility. The following table details the market discount rate developed using the weighted cost of capital (WACC) of the market debt and equity:

Water and Wastewater Cost of Capital
Third Quarter 2019 (9-30-2019)

As a Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	30%	Market	4.45%	Market	28.89%	71.11%	0.95%
Equity	70%	Market	9.95%	Market	0.0%	100.0%	6.97%
Total Capital r	**100.0%**						**7.92%**
Growth (g)							**1.52%**
Rate without Growth: [(1+r)/(1+g)]-1							**6.31%**

The following table presents the results of the discounted cash flow analysis:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Potential Purchaser: Investor-Owned Utility
As of September 30, 2019
Discounted Cash Flow Analysis

Discount Rate: 7.92%
Capitalization Rate: 6.31%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	1,448,318	767,855	705,514	680,463	(25,051)	(7,237)	134,475	71	553,154	0.963	532,687	532,687
2	1.5	1,824,881	786,682	709,470	1,038,199	328,729	94,970	135,398	1,884	805,947	0.892	718,905	1,251,592
3	2.5	1,843,130	805,989	713,494	1,037,141	323,647	93,502	136,329	91	807,219	0.827	667,570	1,919,162
4	3.5	1,861,561	825,790	717,586	1,035,771	318,185	91,924	137,267	92	806,488	0.766	617,770	2,536,932
5	4.5	2,252,489	846,099	721,747	1,406,390	684,643	197,793	138,214	1,955	1,068,428	0.710	758,584	3,295,516
6	5.5	2,275,014	866,928	725,980	1,408,086	682,106	197,060	139,171	112	1,071,743	0.658	705,207	4,000,723
7	6.5	2,297,764	888,291	730,199	1,409,473	679,274	196,242	139,790	114	1,073,327	0.609	653,656	4,654,379
8	7.5	2,320,742	910,203	734,624	1,410,539	675,915	195,272	140,780	115	1,074,372	0.565	607,020	5,261,399
9	8.5	2,692,061	932,678	739,125	1,759,383	1,020,258	294,753	141,778	1,856	1,320,996	0.523	690,881	5,952,280
10	9.5	2,718,982	955,732	743,701	1,763,250	1,019,549	294,548	142,784	135	1,325,783	0.485	643,005	6,595,285
11	10.5	2,746,172	979,378	748,355	1,766,794	1,018,439	294,227	143,800	135	1,328,632	0.449	596,556	7,191,841
12	11.5	3,048,251	1,003,636	753,087	2,044,615	1,291,528	373,123	144,824	1,511	1,525,157	0.416	634,465	7,826,306
13	12.5	3,078,734	1,028,518	756,642	2,050,216	1,293,574	373,713	145,858	153	1,530,492	0.386	590,770	8,417,076
14	13.5	3,109,521	1,054,043	761,517	2,055,478	1,293,961	373,825	146,899	153	1,534,601	0.357	547,853	8,964,929
15	14.5	3,451,568	1,080,227	766,472	2,371,341	1,604,869	463,647	147,952	1,710	1,758,032	0.331	581,909	9,546,838
16	15.5	3,451,568	1,107,089	771,392	2,344,479	1,573,087	454,465	149,011	-	1,741,003	0.307	534,488	10,081,326
17	16.5	3,451,568	1,134,646	776,512	2,316,922	1,540,410	445,024	150,082	-	1,721,816	0.284	488,996	10,570,322
18	17.5	3,658,662	1,162,919	781,717	2,495,743	1,714,026	495,182	151,161	1,036	1,848,364	0.263	486,120	11,056,442
19	18.5	3,658,662	1,191,925	787,006	2,466,737	1,679,731	485,274	152,249	-	1,829,214	0.244	446,328	11,502,770
20 and beyond	19.5	3,658,662	1,221,683	792,382	2,436,979	1,644,597	475,124	153,347	-	1,808,508	3.582	6,478,076	17,980,846
			19,550,311					2,871,169					
Age									19.5				
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$									0.226				
PW to Perpetuity = 1/Capitalization Rate									15.848				
$PW_{(20and Beyond)}$ = PW to Perpetuity * $PW Factor_{(19.5)}$									3.582				

Based on the above described discounted cash flow analysis, the Income Approach to value of the Borough of Kane Authority's wastewater system's property and its operations was determined to be $17,980,846.

Market Approach

The market or comparable sales approach to value looks to market sales of comparable properties in order to arrive at value. In this appraisal, the market approach was addressed from a comparable sales approach of Pennsylvania water and wastewater systems and market value to book value ratios based on investor owned water utilities' financial performance as reported in Value Line Investment Survey (July 12,2019).

Market Sales – In the comparable sale market approach the sales of Pennsylvania municipal water and wastewater systems to investor owned water/wastewater utilities were used to insure comparability. As the purpose of this appraisal is to define the value of Borough of Kane Authority's wastewater collection system under Section 1329 of the PA CS the market comparable sales were limited to sales subsequent to the passage of Section 1329 in 2016. The following sales were considered:

Approximate Date	Buyer	Seller	County		Purchase Price	Number of Total Customers
6/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	159,000,000	21,953
8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	2,106
12/1/2017	Aqua PA	Limerick Township	Montgomery		64,373,000	5,434
12/10/2017	Aqua PA Aqua PA	East Bradford Township Muhung	Chester	Wastewater Collection and paid for treatment Capacity	5,000,000	1,248
6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	10,500
11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	2,325
	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	998
5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	
10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	4,950

In order to arrive at a measure of comparability these system sales were analyzed in relationship of the purchase price to the properties' depreciated original cost (OCLD) and depreciated replacement cost (RCNLD) (Market Approach tab).

Financial Market Ratios – In the market approach based on market financial ratios the market data of companies (nine) in the water/wastewater industry as reported in Value Line Investment Surveys (July 2019) were analyzed. In the analysis the companies' stock (market) and debt (book value) per share are compared as a ratio to the book investment value per share.

The following table summarizes both the comparable sales and financial market ratio analysis and the Market Approach conclusion of this appraisal:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Market Approach Summary

Comparable Sales	Book Ratios	Purchase Price to Depreciated Original Cost (Book Value)	Indicated Market Value
Depreciated Original Cost (AUS Consultants) OCLD	12,070,455.38	1.817	21,932,017
Replacement Cost New less Depreciation RCNLD	29,015,055.11	0.9621	27,915,385
Average			24,923,701
Use (RCNLD)			27,915,385

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.21	
Market to Book (equity and debt)	2.03	
Use (equity and debt)	2.03	Input

Market Conclusion	Investor Purchaser Owned Value to Depreciated Original Cost (Book Value)		
	Borough of Kane Authority		
Borough of Kane Authority AUS Depreciated Original Cost	12,070,455	2.03	24,503,024

Market Value	Indicated Valus $s
Minimum	21,932,017
Mean	24,783,475
Median	24,503,024
Maximum	27,915,385
Use (RCNLD)	**27,915,385**

The market approach conclusion of this appraisal was determined to be $27,915,385.

Cost Approach Revisited – Before concluding this appraisal's fair market value the preliminary cost approach conclusion of $29,015,055 needs to be reviewed in light of the above described income and market analyses in order to evaluate if external obsolescence exists in the preliminary replacement cost new less depreciation conclusion. The appraisal literature in regard to developing a cost approach states:

> "The last step in the implementation of the cost approach is to estimate *economic obsolescence*. Economic obsolescence (sometimes called "external obsolescence") has been previously defined as the loss in value or usefulness of a property caused by factors external to the asset. These factors include increased cost of raw materials, labor, utilities (without an offsetting increase in product price); reduced demand for the product; increased competition; environmental or other regulations; or similar factors.
>
> The difficulty in measuring the full effect of economic obsolescence is one of the weaknesses of the cost approach. Because economic obsolescence is usually a function of outside influences that affect an entire business (i.e., all tangible and intangible assets) rather than individual assets or isolated groups of assets, it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic influences on value. However, the cost approach can be used to measure some forms of economic obsolescence."[7]

The above described income approach value conclusion of $17,980,846 and the market approach conclusion of $27,915,385 for the Borough of Kane Authority's future wastewater system; however, the income approach is affected by the Section 1329 requirement that the rate base being the lesser of the appraised value or the purchase price. With the purchase price being $17.57 million the income approach is limited. Comparing to the preliminary cost approach conclusion of $29,015,055 to the market approach conclusion of $27,915,385 indicates no significant external obsolescence exists in the cost approach conclusion of $29,015,055 detailed as follows:

[7] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, pp. 96-97.

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value

36	37	38	39	40	41
(36)	(37)	(38)	(39)	(40)	(41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.0	Land & Land Rights		62,825.34	0.00%	62,825.34
354.0	Structures & Improvements		12,114,945.13	0.00%	12,114,945.13
360.0	Collection Sewers - Force		562,456.38	0.00%	562,456.38
361.0	Collection Sewers - Gravity		9,544,842.17	0.00%	9,544,842.17
363.0	Services to Customers		271,576.39	0.00%	271,576.39
364.0	Flow Measuring Devices		22,846.47	0.00%	22,846.47
371.0	Pumping Equipment		1,046,187.33	0.00%	1,046,187.33
380.0	Wastewater and Disposal Equipment		3,843,952.28	0.00%	3,843,952.28
381.0	Treatment Plant Sewers		1,423,704.62	0.00%	1,423,704.62
389.0	Other Plant and Misc Equipment		781.83	0.00%	781.83
390.0	Office Furniture and Equipment		8,325.62	0.00%	8,325.62
391.0	Transportation Equipment		21,996.48	0.00%	21,996.48
392.0	Stores Equipment		9,903.53	0.00%	9,903.53
393.0	Tools, Shop, and Garage Equipment		68,918.37	0.00%	68,918.37
394.0	Laboratory Equipment		2,216.42	0.00%	2,216.42
395.0	Power Operated Equipment		2,909.14	0.00%	2,909.14
396.0	Communications Equipment		4,714.06	0.00%	4,714.06
397.0	Miscellaneous Equipment		1,953.55	0.00%	1,953.55
Grand Total	Grand Total		**29,015,055.11**	0.00%	**29,015,055.11**

Value Conclusion

The Fair Market Value of the Borough of Kane Authority's wastewater system's property, plant and equipment and its operation was determined to be $29,015,055 as follows:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach				
Financials' Net Book (3-31-2019)				
Gross Book		20,035,634		
Accumulated Depreciatiomn		10,249,417		
Net Book		9,825,885		
Inventory of Assets (7-2019)				
Original Cost ($OC)		21,023,527		
Depreciated Original Cost ($OCLD)		12,070,455		
Replacement Cost (9-30-2019)				
Replacement Cost New (COR)		55,539,558		
Depreciated Replacement Cost New (CORLD)	**$**	**29,015,055**		
Cost Approach Conclusion		**29,015,055**	**50%**	**14,507,528**
Income Approach				
Required Rate Increases: 25% period 2; 20% period 5; 15% period 9; 10% period 12; 10% period 15; 6% period 18 (Input 6)		17,980,846		
Income Approach Conclusion		**17,980,846**	**40%**	**7,192,338**
Market Approach				
Market Comparables (to)				
OCLD		21,932,017		
CORLD		27,915,385		
Market Financials (to)				
OCLD		24,503,024		
Market Approach Conclusion		**27,915,385**	**10%**	**2,791,539**
Appraisal Conclusion	**$**	**24,491,405**	**100%**	**24,491,405**
Conclusion (cost approach)	**$**	**29,015,055**		

As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the Borough of Kane Authority's property, plant and equipment this appraisal's conclusion of $24,491,405 is consistent with the purpose of the appraisal. As the cost approach work papers details our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC)

Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property this detail it can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

PURPOSE AND SCOPE OF WORK

The purpose of this appraisal of the Borough of Kane Authority's wastewater utility is the determination of the fair market value of the property plant and equipment of wastewater utility. The report was prepared based on the 2018-2019 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PA CS) Paragraph 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are our client Pennsylvania American Water Company and the Pennsylvania Public Utility Commission.

The value established in this appraisal was based on the definition of Market Value as:

> *"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 14th Edition, page 58.*

In conducting this appraisal, we utilized several sources of data:

- Annual (year-ending March 31) Borough of Kane Authority (Pennsylvania) wastewater operational financial statements cover the period 2013 through 2019 results.

- The Gannett Fleming's Engineer's Assessment and inventory of the Borough of Kane Authority's wastewater system's property at September 19, 2019.

- The Handy-Whitman (water industry) Index of Public Utilities Construction Costs for northeastern United States, AUS Consultant General Plant Cost Indexes for the period 1946 through July 1, 2019, and various cost indexes published by the United States Bureau of Labor Statistics (US BLS).

In preparing this fair market value appraisal of the Borough of Kane Authority's, wastewater system property, plant and equipment, and its operations, the cost, income, and market approaches to value were considered. Primary reliance was placed on the cost approach for the property, plant and equipment, with the income approach and market approaches being utilized to confirm the overall value of the sewer system's operation. A detailed explanation of each approach to value is included below in the section "Appraisal Procedures and Results".

WATER/WASTEWATER INDUSTRY NATIONALLY AND IN PENNSYLVANIA AND THE BOROUGH OF KANE AUTHORITY'S WASTEWATER SYSTEM FACILITIES

Water/wastewater Industry

The water and wastewater industry in the United States consist of both municipal authorities (literally thousands) and private investor owned companies. Of the investor owned there are nine which are large enough to be tracked by Value Line Investment Surveys, of which, two are major players in the northeast portion of the United States, American Water Works Company, Inc. and Aqua America, Inc. American and Aqua have been particularly active in the acquisition of municipal water and wastewater authorities.

Pennsylvania Water / Wastewater Industry

The water and wastewater industry in Pennsylvania also consist of both municipal and investor owned systems. Over last several years the need for infrastructure improvements has led the Pennsylvania legislature to pass legislation facilitating the acquisition of municipal water and/or wastewater authorities' systems to a private investor owned rate regulated companies such as American Water and Aqua America. This legislation was Act 12 of the Pennsylvania legislator's 2016 legislative session (Act 12). The Act 12 legislation added a section (1329) modifying Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PA CS) adding Section 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12. This appraisal was developed to meet the valuation criteria established by Section 1329 and the PA PUC Implementation Orders in the valuation of acquired water and wastewater systems.

Borough of Kane Authority's Wastewater System Facilities, its Property and Operations[8]

The Borough of Kane's Wastewater System covered by this Study consists of gravity separate and combined sewers within Kane Borough, gravity separate sewers and low pressure sewers in contiguous Wetmore Township, eight (8) collection system lift stations (West Wind, Pond Street, Jo Jo Road Grinder Pump, Route 321 South, Route 6, Route 66, West Kane and Willow Run) and two (2) wastewater treatment plants (Pine Street and Kinzua Road).

[8] Extracted from Engineer's Assessment

APPRAISAL PROCEDURES AND RESULTS

The purpose of this appraisal of the Borough of Kane Authority's wastewater system is the determination of the fair market value of the wastewater's property plant and equipment as of September 30, 2019. The report was prepared based on the 2018-2019 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PS CS) Section 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12 of the Pennsylvania legislator's 2016 legislative session (Act 12). The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission (PA PUC).

The value established in this appraisal was based on the definition of Market Value as:

> *"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 14th Edition, page 58.*

In conducting this appraisal, we utilized several sources of data:

- Annual (year-ending March 31) The Borough of Kane Authority's wastewater system's operational financial statements cover the period 2013 through 2019.

- The Gannett Fleming's Engineer Assessment of the Borough of Kane Authority's wastewater system inventory and original cost study at September 19, 2019.

- The Handy-Whitman (water industry) Index of Public Utilities Construction Costs for northeastern United States, AUS Consultant General Plant Cost Indexes for the period 1946 through July 1, 2019, and various cost indexes published by the United States Bureau of Labor Statistics (US BLS).

In preparing this fair market value appraisal of the Borough of Kane's wastewater system's property, plant and equipment, and its operations; the cost, income, and market approaches to value were considered. Primary reliance was placed on the cost approach for the property, plant and equipment, with the income approach and market approaches being utilized to confirm the overall value of the sewer system's operation. Detailed explanation of each approach to value is included below.

Cost Approach (Cost Approach tab) - The philosophy in the cost approach to value is that the maximum value of a property's tangible assets is established by the cost to acquire or build a similar property. In this appraisal, the cost approach to value was analyzed using reproduction/replacement cost approach.

Reproduction cost and replacement cost are defined as:

> Reproduction cost – "The estimated cost to construct, at current prices as of the effective date of the appraisal, an exact duplicate or replica of the [property] being appraised, using the same materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, super-adequacies, and obsolescence of the subject [property]."[9]
>
> Replacement cost – "The estimated cost to construct, at current prices as of the effective appraisal date, a substitute for the [property] being appraised using modern materials and current standards, design and layout."[10]
>
> In the wastewater industry the property's reproduction costs and replacement costs are quite similar; therefore, the property's cost new was determined based on its replacement cost new.

The trended original cost method was utilized in preparing the replacement cost new. "Trending is a method of estimating a property's replacement cost new in which an *index* or *trend factor* is applied to the property's *historical cost* to convert the known cost into an indication of current cost. Simply put, trending reflects the movement of price over time."[11] In the trended original cost method, the Borough of Kane Authority's investment

[9] The Appraisal of Real Estate, 13th Edition. Page 385
[10] ibid
[11] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 59

in wastewater plant and equipment is restated to costs reflective of the appraisal date, by the application of cost trends to the property's original investment. AUS Consultants utilized the Engineer's Assessment performed by Gannett Fleming (Engineer's Assessment tab) as the starting point of the Cost Approach. Utilizing the Engineer's Assessment of the Borough of Kane Authority's original cost in property, plant and equipment AUS Consultants developed the plant's depreciated original cost (OCLD) and depreciated replacement cost (RCNLD) at September 30, 2019 (Cost Approach tab).

The cost trends are applied to each of the various investment categories (NARUC plant accounts) by original year of placement for that investment. The cost indexes used in these studies were the Handy-Whitman Index of Public Utility Construction Costs for the water industry of the northeastern region of the United States which includes the Commonwealth of Pennsylvania (HW), the AUS Consultants of General Plant Indexes AUS), and various United States Bureau of Labor Statistics (US BLS) indexes. The following table details the costing parameters using in the trending costing procedures:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.00	Land & Land Rights	USBLS	PPI	3.00	USBLS3	1.00
354.00	Stuctures & Improvements	HW	W-1	15.00	HWW-115	1.00
360.00	Mains Force	HW	W-1	44.00	HWW-144	1.00
361.00	Mains Gravity	HW	W-1	44.00	HWW-144	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00
364.00	Flow Measuring Devices	HW	W-1	40.00	HWW-140	1.00
371.00	Pumping Equipment	HW	W-1	9.00	HWW-19	1.00
380.00	Treatment and Disposal Equipment	HW	W-1	17.00	HWW-117	1.00
381.00	Plant Sewers	HW	W-1	17.00	HWW-117	1.00
389.00	Other Plant & Misc Equip	HW	W-1	17.00	HWW-117	1.00
391.00	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00
392.00	Stores Equipment	AUS	T-1	7.00	AUST-17	1.00
393.00	Tools, Shop, & Garage Equipment	AUS	T-1	7.00	AUST-17	1.00
394.00	Laboratory Equipment	AUS	T-1	7.00	AUST-17	1.00
395.00	Power Operated Equipment	AUS	T-1	8.00	AUST-18	1.00
396.00	Communications Equipment	USBLS	PPI	2.00	USBLS2	1.00
397.00	Miscellaneous Equipment	AUS	T-1	8.00	AUST-18	1.00

The following table presents the development of the cost approach for a portion of account 360 Mains Force (this example will be used to describe the entire cost approach process):

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

(1)	(2)	(3)	(4)	(5)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
					OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	Cheltenham Wastewater Collestion System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input	Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed	Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
360	360	3" Diameter Force Main	2004	2004	25,259	HWW-144	362.6	595.4	1.642	41,474	1.000	41,474
360	360	4" Diameter Force Main	1995	1995	29,271	HWW-144	277.5	595.4	2.146	62,816	1.000	62,816
360	360	Manholes Frame & Covers	1995	1995	9,000	HWW-144	277.5	595.4	2.146	19,314	1.000	19,314
360	360	Inflow Protectors	1995	1995	2,400	HWW-144	277.5	595.4	2.146	5,150	1.000	5,150
360	360	4" Diameter Force Main	1996	1996	72,853	HWW-144	284.9	595.4	2.090	152,263	1.000	152,263
360	360	Air Release Valve and Vault	1996	1996	3,200	HWW-144	284.9	595.4	2.090	6,688	1.000	6,688
360	360	2" Dia Force Main	1996	1996	32,418	HWW-144	284.9	595.4	2.090	67,754	1.000	67,754
360	360	1 1/2 Diameter Service FM	1996	1996	3,664	HWW-144	284.9	595.4	2.090	7,658	1.000	7,658
360	360	4" Diameter FM	1996	1996	17,258	HWW-144	284.9	595.4	2.090	36,068	1.000	36,068
360	360	1 1/2" Diameter Service FM	1996	1996	12,719	HWW-144	284.9	595.4	2.090	26,582	1.000	26,582
360	360	4" Diameter Force Main	1995	1995	90,240	HWW-144	277.5	595.4	2.146	193,655	1.000	193,655
360	360	6" Diameter Force Main	1995	1995	45,528	HWW-144	277.5	595.4	2.146	97,703	1.000	97,703
360	360	1 1/2 Diameter Service FM	1996	1996	-	HWW-144	284.9	595.4	2.090	-	1.000	-
360	360	4" Diameter Force Main	1995	1995	86,144	HWW-144	277.5	595.4	2.146	184,865	1.000	184,865
360	360	Air Release Valve Vault	1995	1995	2,800	HWW-144	277.5	595.4	2.146	6,009	1.000	6,009
360	360	Force Main Signs	1995	1995	1,358	HWW-144	277.5	595.4	2.146	2,915	1.000	2,915
360	360	Collection Sewers - Force	SUB-TOTAL =		434,111	HWW-144				910,914	1.000	910,914

Using the trended original cost method, the Borough of Kane Authority's investment in this example of account 360 Mains Force of $434,111 was determined to have a replacement cost new of $910,914.

When the trended cost method is applied to each of the Borough of Kane Authority's investment in plant, property and equipment of $21,023,527 was determined to have a replacement cost new of $55,539,558 detailed as follows.

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

0.00

Replacement Cost New (RCN)

1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6	7	8	9 (9)	10 (10)	11 (11)	12 (12)	13 (13)	14 (14)	15 (15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	16 (16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
Input	Input	Input	Input	Input				O/C $s Input	Input	Input	Input	Calculation	RCN $s Calculation	COR $s / RCN $s Input	COR $s Calculation
Eng Assmnt NARUC Code	AUS Input NARUC Code	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmnt) Asset Description	Eng Assmnt Service Date	AUS Input Year Installed				Eng Assmnt Original Cost	AUS Input Cost Index Table	Cost Indices Lookup Code(10) & (5) YearIndex	Cost Indices Lookup Code(10) & Study YR APPCostIndex	Col (12) / (11) Translator	Col (5) * (13) RCN	AUS Input COR / RCN Factor	Col (14) * (15) COR
353.00	353.00	Land & Land Rights						34,237.24	USBLS3			1.835	62,825.34	1.000	62,825.34
354.00	354.00	Structures & Improvements						9,477,073.12	HWW-115			2.233	21,158,500.80	1.000	21,158,500.80
360.00	360.00	Collection Sewers - Force						434,111.13	HWW-144			2.098	910,913.98	1.000	910,913.98
361.00	361.00	Collection Sewers - Gravity						5,587,425.86	HWW-144			3.127	17,472,483.03	1.000	17,472,483.03
363.00	363.00	Services to Customers						218,609.50	HWW-139			2.127	464,964.06	1.000	464,964.06
364.00	364.00	Flow Measuring Devices						25,321.55	HWW-140			1.932	48,914.86	1.000	48,914.86
371.00	371.00	Pumping Equipment						941,801.06	HWW-19			2.595	2,443,932.69	1.000	2,443,932.69
380.00	380.00	Wastewater and Disposal Equipment						3,003,588.67	HWW-117			3.371	10,126,485.78	1.000	10,126,485.78
381.00	381.00	Treatment Plant Sewers						1,093,509.61	HWW-117			2.382	2,604,456.84	1.000	2,604,456.84
389.00	389.00	Other Plant and Misc Equipment						580.00	HWW-117			2.087	1,210.46	1.000	1,210.46
390.00	390.00	Office Furniture and Equipment						34,642.35	AUST-115			1.190	41,209.98	1.000	41,209.98
391.00	391.00	Transportation Equipment						52,227.32	AUST-14			1.065	55,626.18	1.000	55,626.18
392.00	392.00	Stores Equipment						10,000.00	AUST-17			1.058	10,580.00	1.000	10,580.00
393.00	393.00	Tools, Shop, and Garage Equipment						81,973.95	AUST-17			1.268	103,909.72	1.000	103,909.72
394.00	394.00	Laboratory Equipment						7,029.79	AUST-17			1.498	10,529.65	1.000	10,529.65
395.00	395.00	Power Operated Equipment						4,065.00	AUST-18			1.091	4,434.92	1.000	4,434.92
396.00	396.00	Communications Equipment						10,375.61	USBLS2			0.951	9,866.83	1.000	9,866.83
397.00	397.00	Miscellaneous Equipment						6,955.60	AUST-18			1.253	8,713.03	1.000	8,713.03
Grand Total	**Grand Total**	**Grand Total**						**21,023,527.36**				2.642	**55,539,558.15**	1.000	**55,539,558.15**

Replacement Cost New less Depreciation - The replacement cost described above reflects the cost of new property; however, the Borough of Kane Authority's wastewater system property is not new and has experienced normal depreciation and potentially functional and or economic obsolescence. These various forms of depreciation are defined as follows:

> Normal depreciation/deterioration, akin to physical deterioration, is "loss in value caused by wear, tear, age and use."[12]
>
> Functional obsolescence is "the loss in value or usefulness of a property caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient of less costly replacement property that new technology has developed."[13]
>
> Economic, or external, obsolescence is defined as "A loss in value caused by factors outside a property"[14] and is most often indicated by insufficient earning.

Based on our experience in regard to water and wastewater depreciation studies and our analysis of the Borough of Kane Authority's wastewater system operating

[12] The Dictionary of Real Estate Appraisal, 4th Edition
[13] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.
[14] The Appraisal of Real Estate, 13th Edition, page 442.

performance: the Borough of Kane Authority's property experiences normal depreciation but not any significant functional obsolescence; economic obsolescence is the best evaluated after the results of the Income and Market Approaches to value are determined (see Cost Approach Revisited).

In order to ascertain the service lives of the various types of the Borough of Kane Authority's property, plant and equipment, we considered AUS Consultants' past water and wastewater depreciation studies, and documents provided by the Borough of Kane Authority. Through our experience the following normal depreciation parameters of survival/retirement characteristics and service lives were determined for the Borough of Kane Authority's wastewater utility property:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.00	Land & Land Rights	Non-Depr	0.00	0.00%	Non-Depr	0.00
354.00	Stuctures & Improvements	R4.0	55.00	0.00%	MACRS	25.00
360.00	Mains Force	R3.0	60.00	0.00%	MACRS	25.00
361.00	Mains Gravity	R3.0	75.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	55.00	0.00%	MACRS	25.00
364.00	Flow Measuring Devices	R3.0	35.00	0.00%	MACRS	25.00
371.00	Pumping Equipment	R3.0	35.00	0.00%	MACRS	25.00
380.00	Treatment and Disposal Equipment	R3.0	45.00	0.00%	MACRS	25.00
381.00	Plant Sewers	R3.0	45.00	0.00%	MACRS	25.00
389.00	Other Plant & Misc Equip	R3.0	45.00	0.00%	MACRS	25.00
391.00	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00
392.00	Stores Equipment	R3.0	35.00	0.00%	MACRS	25.00
393.00	Tools, Shop, & Garage Equipment	R3.0	35.00	0.00%	MACRS	25.00
394.00	Laboratory Equipment	R3.0	20.00	0.00%	MACRS	20.00
395.00	Power Operated Equipment	R3.0	15.00	0.00%	MACRS	15.00
396.00	Communications Equipment	R3.0	12.00	0.00%	MACRS	12.00
397.00	Miscellaneous Equipment	R3.0	20.00	0.00%	MACRS	20.00

Normal Depreciation – The extent of the depreciation in the property was evaluated using age-life depreciation techniques. In age-life depreciation, the property's depreciation or condition is estimated using the following formulas:

Depreciation (%) = $\frac{\text{Age (years)} \times 100\%}{\text{Service Life (years)}}$

Condition (%) = $\frac{\text{Remaining Life (years)} \times (100\%)}{\text{Service Life (years)}}$

where: the property's Service Life = Age + Remaining Life
and Remaining Life = f(Survival Characteristic, Service Life, Age)

When the above depreciation lives are used to quantify the property's depreciation is applied to the replacement cost new of the example account 360 Mains Force of $910,914, the replacement cost new less depreciation was determined to be $562,456 detailed as follows:

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Total Life Expectancy
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Lookup Iowa Curves Life Tables @ col (26)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NLife	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR *Nlife
360	3" Diameter Force Main	2004	15.25	41,474	R3.0	60.0	25	R3.0025	0.75917	45.55	60.80	74.917763%	31,071.74	632,486	1,889,162	2,521,647	2,498,468
360	4" Diameter Force Main	1995	24.25	62,816	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	38,107.09	1,523,278	2,349,302	3,872,580	3,768,934
360	Manholes Frame & Covers	1995	24.25	19,314	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	11,716.85	468,365	722,344	1,190,708	1,158,840
360	Inflow Protectors	1995	24.25	5,150	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	3,124.49	124,897	192,625	317,522	309,024
360	4" Diameter Force Main	1996	23.25	152,263	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	94,389.48	3,540,109	5,773,804	9,313,914	9,135,766
360	Air Release Valve and Vault	1996	23.25	6,688	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	4,145.97	155,496	253,609	409,105	401,280
360	2" Dia Force Main	1996	23.25	67,754	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	42,001.26	1,575,272	2,569,217	4,144,489	4,065,217
360	1 1/2 Diameter Service FM	1996	23.25	7,658	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	4,747.14	178,043	290,382	468,425	459,466
360	4" Diameter FM	1996	23.25	36,068	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	22,359.09	838,585	1,367,705	2,206,291	2,164,091
360	1 1/2" Diameter Service FM	1996	23.25	26,582	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	16,478.61	618,036	1,007,997	1,626,033	1,594,931
360	4" Diameter Force Main	1995	24.25	193,655	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	117,480.92	4,696,135	7,242,698	11,938,833	11,619,302
360	6" Diameter Force Main	1995	24.25	97,703	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	59,271.62	2,369,300	3,654,096	6,023,395	5,862,185
360	1 1/2 Diameter Service FM	1996	23.25	-	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	-	-	-	-	-
360	4" Diameter Force Main	1995	24.25	184,865	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	112,148.45	4,482,977	6,913,952	11,396,928	11,091,901
360	Air Release Valve Vault	1995	24.25	6,009	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	3,645.24	145,713	224,729	370,443	360,528
360	Force Main Signs	1995	24.25	2,915	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	1,768.43	70,691	109,024	179,715	174,905
360	Collection Sewers - Force			910,914									562,456	21,419,383	34,560,646	55,980,028	54,654,838

When the above depreciation lives are used to quantify the property's depreciation is applied to each of the Borough of Kane Authority's investment in plant, property and equipment the replacement cost new (RCN) of $55,539,558 the resultant RCN less depreciation (RCNLD) was found to be $29,015,055 detailed as follows:

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New less Depreciation (RCNLD)

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-((20)+0.5)	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Lookup Iowa Curves Life Tables @ col (26)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.0	Land & Land Rights		23.25	62,825.34	Non-Depr	0.00				23.25	23.25	100.00%	62,825.34	1,460,689.00	1,460,689.00	1,460,689.00	-
354.0	Structures & Improvements		23.71	21,158,500.80	R4.0	55.00				31.76	55.46	57.26%	12,114,945.13	501,642,135.00	671,909,981.00	1,173,552,072.00	1,163,717,588.00
360.0	Collection Sewers - Force		23.51	910,913.98	R3.0	60.00				37.94	61.45	61.75%	562,456.38	21,419,383.00	34,560,646.00	55,980,028.00	54,654,838.00
361.0	Collection Sewers - Gravity		35.95	17,472,483.03	R3.0	75.00				42.40	78.35	54.63%	9,544,842.17	628,202,263.00	740,813,751.00	1,369,016,008.00	1,310,436,247.00
363.0	Services to Customers		23.53	464,964.06	R3.0	55.00				33.05	56.58	58.41%	271,576.39	10,942,616.00	15,366,178.00	26,308,794.00	25,573,024.00
364.0	Flow Measuring Devices		19.83	48,914.86	R3.0	35.00				17.16	36.99	46.71%	22,846.47	969,994.00	839,211.00	1,809,206.00	1,712,021.00
371.0	Pumping Equipment		21.42	2,443,932.69	R3.0	35.00				15.89	37.32	42.81%	1,046,187.33	52,359,384.00	38,845,914.00	91,205,296.00	85,537,649.00
380.0	Wastewater and Disposal Equipment		32.15	10,126,485.78	R3.0	45.00				18.17	50.32	37.96%	3,843,952.28	325,586,007.00	183,963,770.00	509,549,779.00	455,691,864.00
381.0	Treatment Plant Sewers		21.15	2,604,456.84	R3.0	45.00				25.41	46.56	54.66%	1,423,704.62	55,084,244.00	66,173,952.00	121,258,198.00	117,200,559.00
389.0	Other Plant and Misc Equipment		16.25	1,210.46	R3.0	45.00				29.64	45.89	64.59%	781.83	19,670.00	35,878.00	55,548.00	54,471.00
390.0	Office Furniture and Equipment		13.65	41,209.98	R3.0	12.00				2.70	16.35	20.20%	8,325.62	562,532.00	111,395.00	673,929.00	494,520.00
391.0	Transportation Equipment		12.01	55,626.18	R3.0	10.00				4.00	16.01	39.54%	21,996.48	668,166.00	222,384.00	890,551.00	556,262.00
392.0	Stores Equipment		2.25	10,580.00	R3.0	35.00				32.94	35.19	93.61%	9,903.53	23,805.00	348,505.00	372,310.00	370,300.00
393.0	Tools, Shop, and Garage Equipment		12.21	103,909.72	R3.0	35.00				23.68	35.89	66.33%	68,918.37	1,269,022.00	2,460,586.00	3,729,606.00	3,636,840.00
394.0	Laboratory Equipment		19.05	10,529.65	R3.0	20.00				4.85	23.91	21.05%	2,216.42	200,628.00	51,104.00	251,731.00	210,594.00
395.0	Power Operated Equipment		5.25	4,434.92	R3.0	15.00				10.01	15.26	65.60%	2,909.14	23,283.00	44,394.00	67,677.00	66,524.00
396.0	Communications Equipment		7.77	9,866.83	R3.0	12.00				5.94	13.70	47.78%	4,714.06	76,634.00	58,571.00	135,203.00	118,402.00
397.0	Miscellaneous Equipment		18.58	8,713.03	R3.0	20.00				5.12	23.70	22.42%	1,953.55	161,869.00	44,632.00	206,502.00	174,261.00
Grand Total			28.82	**55,539,558.15**		57.98				31.64	60.43	52.24%	**29,015,055.11**	**1,600,672,324.00**	**1,757,311,541.00**	**3,356,523,127.00**	**3,220,205,964.00**

The preliminary cost approach to value of the Borough of Kane Authority's wastewater utility property was found to be $29,015,055.

Income Approach (Income Approach tabs)

The income approach to value establishes the value of the property based on its economic returns. There are two generally accepted procedures in performing an income analysis: the direct capitalization of anticipated income, and the discounted cash flow procedures.

In the direct capitalization approach, anticipated earnings are capitalized directly into value using a market-required capitalization rate. The Borough of Kane Authority's wastewater operation will be moving from a municipal operation, wherein economic returns are not the primary objective of the operation to a private (investor owned) rate regulated sewer utility operation in which economic returns are one of the objectives of the operation; therefore, the direct capitalization of earnings approach was not utilized in this appraisal.

In the discounted cash flow (DCF) approach, the property's economic returns are forecast for future periods. The cash flows (debt-free after-tax net cash flows) from operations are discounted to the appraisal date using a market derived discount rate resulting in the DCF approach's income indicator of value. Use of the DCF approach allows the appraiser to address the property's historical operating experience and its migration, in future periods, to an operation as a rate regulated income taxed (local, state and federal) operation; thus, making the DCF approach preferable in this case.

In preparing this appraisal's DCF analysis first the results from the Borough of Kane Authority's wastewater utility's operations was evaluated based on an analysis of historical operating performances over the period 2013 through 2019 (Financials tab). In this analysis operating statistics such as revenues and their growth, various operating expenses were stated as function of their typical drivers (revenues, plant investment, income from operations, etc.) were analyzed. Details provided in Income Approach tab. Using the above described analyses, the results of future periods operations were forecast based on the migration of the Borough of Kane Authority's historical operations type experience over time to operations of the wastewater operation similar to a public investor-owned water/wastewater utilities. These forecasts are detailed in the Income Approach tab.

In this appraisal, future operating results were forecasted as follows:

Revenues

Operating Expenses
- Depreciation & Amortization
- Administration & Personnel Expense
- Utilities, Supplies, & Office Expense
- Operating Expense
- System Maintenance
- Contracted Services

Total Operating Expenses

Operating Income (Revenues less Operating Expenses)

Taxes
- Property
- Income (state & federal)

Total Taxes

After Tax Income (Operating Income less Total Taxes)

Net Cash Flows
- Plus: After Tax Income
- Plus: Depreciation
- Less: Capital Expenditures
- Plus/less: Change in Working Capital

Equals: Debt-free after-tax net cash flows

In the above described table, the depreciation expense (both book and tax) and the capital expenditures were forecast based on the investment in property plant and equipment at the appraisal date and in subsequent periods. The initial investment in the plant and depreciation forecast were based on the criteria established in Section 1329

for the acquisition and subsequent regulation (rate base) of the acquired property by the acquiring investor owned utility company. The following table details the forecasts of plant investment, book depreciation, tax depreciation forecast, and the resultant net plant investment and rate base as follows:

Plant Investment
- Initial Investment/ Beginning Plant Balance
- Additions (Capital Expenditures)
- Retirements
- Ending Plant Balance

Depreciation (book)
- Initial Book Depreciation Reserve / Beginning Book Reserve Balance
- Book Depreciation & Amortization
- Retirements
- Ending Book Reserve Balance

Depreciation (tax)
- Initial Tax Reserve / Beginning Tax Reserve
- Tax Depreciation
- Retirement
- Ending Tax Reserve Balance

In these forecasts the initial plant investment was based on the criteria established by Section 1329 as being the lesser of the purchase price or the average of the UVEs' appraisals; therefore, the initial plant investment is uncertain as the appraisal is performed and completed. Initially, the Cost Approach results are utilized as the initial investment by category of plant (NARUC account). The Cost Approach results also defines the property's ages and remaining lives of the various plant investment categories. Using these inputs, the future periods book and tax depreciation can be forecast, as well as the accumulated deferred taxes and resulting rate base.

With a forecast of the future rate base and an estimate of the Pennsylvania Commission's authorized return on rate base, the future return on rate base can be

estimated which along with the forecast operating expenses (operating expenses, depreciation, and taxes) the future period revenue requirement forecasts can be made. An estimate of the PA Commission return on rate base is detailed as follows:

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	45%	Embedded	4.37%	Embedded	Not Applicable	Not Applicable	1.97%
Equity	55%	Embedded	9.95%	Market	Not Applicable	Not Applicable	5.47%
Total Capital r	**100.0%**						**7.44%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**7.44%**

Based on a comparison of the forecast revenues and the forecast of the estimated revenue requirement, future period rate increases were forecast. The criteria in making future period rate adjustments was to bring the forecast achieved return in line with the required return. Based on this process the results of future operations were forecast for the next 21-year period. Period 21 of the forecast was treated in the discounted cash flow as the forecast for period 21 through perpetuity.

Finally, the resultant cash flows from future period operations of the Borough of Kane Authority's wastewater system were discounted to the appraisal date using a market derived discount rate for a public investor-owned water/wastewater utility (Cost of Capital / Required Return tab). The following table details the market discount rate developed using the weighted cost of capital (WACC) of the market debt and equity:

Water and Wastewater Cost of Capital
Third Quarter 2019 (9-30-2019)

As a Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	30%	Market	4.45%	Market	28.89%	71.11%	0.95%
Equity	70%	Market	9.95%	Market	0.0%	100.0%	6.97%
Total Capital r	**100.0%**						**7.92%**
Growth (g)							**1.52%**
Rate without Growth: [(1+r)/(1+g)]-1							**6.31%**

The market cost of debt was developed based on market returns for utilities debt as reported in the Mergent Bond Guide. The market cost of equity was developed using the capital asset pricing model (CAPM) and the dividend-growth model (DGM). Input to these equity costing models were developed based on Value Line Investment Surveys for the water industry published for July 12, 2019 consisting of the following nine companies:

Company	
American States Water (NYSE-AWR)	Consolidated Water Company (NDQ-CWCO)
American Water ((NYSE-AWK)	Middlesex Water (NDQ-MSEX)
Aqua America (NYSE-WTR)	SJW Corporation (NYSE-SJW)
California Water (NYSE-CWT)	York Water (NDQ-YORW)
Connecticut Water (NDQ-CTWS)	

The Value Line data was also used to develop the market capital structure used in the WACC determination. The market required return analysis can be found in the Cost of Capital / Required Return tab.

The following table presents the results of the discounted cash flow analysis:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Potential Purchaser: Investor-Owned Utility
As of September 30, 2019
Discounted Cash Flow Analysis

Discount Rate: 7.92%
Capitalization Rate: 6.31%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	1,448,318	767,855	705,514	680,463	(25,051)	(7,237)	134,475	71	553,154	0.963	532,687	532,687
2	1.5	1,824,881	786,682	709,470	1,038,199	328,729	94,970	135,398	1,884	805,947	0.892	718,905	1,251,592
3	2.5	1,843,130	805,989	713,494	1,037,141	323,647	93,502	136,329	91	807,219	0.827	667,570	1,919,162
4	3.5	1,861,561	825,790	717,586	1,035,771	318,185	91,924	137,267	92	806,488	0.766	617,770	2,536,932
5	4.5	2,252,489	846,099	721,747	1,406,390	684,643	197,793	138,214	1,955	1,068,428	0.710	758,584	3,295,516
6	5.5	2,275,014	866,928	725,980	1,408,086	682,106	197,060	139,171	112	1,071,743	0.658	705,207	4,000,723
7	6.5	2,297,764	888,291	730,199	1,409,473	679,274	196,242	139,790	114	1,073,327	0.609	653,656	4,654,379
8	7.5	2,320,742	910,203	734,624	1,410,539	675,915	195,272	140,780	115	1,074,372	0.565	607,020	5,261,399
9	8.5	2,692,061	932,678	739,125	1,759,383	1,020,258	294,753	141,778	1,856	1,320,996	0.523	690,881	5,952,280
10	9.5	2,718,982	955,732	743,701	1,763,250	1,019,549	294,548	142,784	135	1,325,783	0.485	643,005	6,595,285
11	10.5	2,746,172	979,378	748,355	1,766,794	1,018,439	294,227	143,800	135	1,328,632	0.449	596,556	7,191,841
12	11.5	3,048,251	1,003,636	753,087	2,044,615	1,291,528	373,123	144,824	1,511	1,525,157	0.416	634,465	7,826,306
13	12.5	3,078,734	1,028,518	756,642	2,050,216	1,293,574	373,713	145,858	153	1,530,492	0.386	590,770	8,417,076
14	13.5	3,109,521	1,054,043	761,517	2,055,478	1,293,961	373,825	146,899	153	1,534,601	0.357	547,853	8,964,929
15	14.5	3,451,568	1,080,227	766,472	2,371,341	1,604,869	463,647	147,952	1,710	1,758,032	0.331	581,909	9,546,838
16	15.5	3,451,568	1,107,089	771,392	2,344,479	1,573,087	454,465	149,011	-	1,741,003	0.307	534,488	10,081,326
17	16.5	3,451,568	1,134,646	776,512	2,316,922	1,540,410	445,024	150,082	-	1,721,816	0.284	488,996	10,570,322
18	17.5	3,658,662	1,162,919	781,717	2,495,743	1,714,026	495,182	151,161	1,036	1,848,364	0.263	486,120	11,056,442
19	18.5	3,658,662	1,191,925	787,006	2,466,737	1,679,731	485,274	152,249	-	1,829,214	0.244	446,328	11,502,770
20 and beyond	19.5	3,658,662	1,221,683	792,382	2,436,979	1,644,597	475,124	153,347	-	1,808,508	3.582	6,478,076	17,980,846
			19,550,311					2,871,169					
Age									19.5				
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$									0.226				
PW to Perpetuity = 1/Capitalization Rate									15.848				
$PW_{(20and Beyond)}$ = PW to Perpetuity * PW $Factor_{(19.5)}$									3.582				

Based on the above described discounted cash flow analysis, the Income Approach to value of the Borough of Kane Authority's wastewater property and its operations was determined to be $17,980,846.

Market Approach (Market Approach tab)

The market or comparable sales approach to value looks to market sales of comparable properties in order to arrive at value. In this appraisal, the market approach was addressed from a comparable sales approach using Pennsylvania water and wastewater systems and market value to book value ratios based on investor owned water utilities reported in Value Line Investment Survey.

Market Sales – In the comparable sale market approach the sales of Pennsylvania municipal water and wastewater systems to investor owned water/wastewater utilities following the passage of Section 1329 were used to insure comparability. The following sales were considered:

Approximate Date	Buyer	Seller	County		Purchase Price	Number of Total Customers
6/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	159,000,000	21,953
8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	2,106
12/1/2017	Aqua PA	Limerick Township	Montgomery		64,373,000	5,434
12/10/2017	Aqua PA	East Bradford Township	Chester	Wastewater Collection and paid for treatment Capacity	5,000,000	1,248
	Aqua PA	Muhung				
6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	10,500
11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	2,325
	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	998
5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	
10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	4,950

In order to arrive at a measure of comparability these system sales were analyzed in relationship of the purchase price to the properties' depreciated original cost (OCLD) and depreciated replacement cost (RCNLD) (Market Approach tab).

The following table details the market sales analysis:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Comparable Sales Approach

Market Sales Basis

Description	New Garden Wastewater System	McKeesport Wastewater System	Limerick Wastewater System	Mahoning Water System	Mahoning Wastewater System	East Bradford Wastewater Collection System	Sadsbury Wastewater Collection System	Exeter Wastwater Collection System	Steelton Water System	Cheltenham Wastewarer Collection System	Simple Average / Standard Deviation	Remove Outliers Simple Average / Standard Deviation	Weighted Average	Remove Outliers Weighted Average / Standard Deviation	Use
System Description															
Type of System	Wastewater Collection & Treatment	Wastewater Collection & Treatment	Wastewater Collection & Treatment	Water Treatment & Distribution	Wastewater Collection & Treatment	Wastewater Collection Only	Wastewater Collection Only	Wastewater Collection & Treatment	Water Treatment & Distribution	Wastewater Collection Only					
System Attributes															
Purchase Price	29,500,000	159,000,000	75,100,000	4,734,800	4,765,200	5,000,000	9,250,000	96,000,000	22,500,000	50,250,000			456,100,000	441,600,000	
Proportion of Purchase Price to Total	6%	35%	16%	1%	1%	1%	2%	21%	5%	11%			100%	97%	
Proportion of Purchase Price to Outlier Adjusted Total	7%	36%	17%				2%	22%	5%	11%				100%	
Acquirer	Aqua-PA	PA-American	Aqua-PA	SUEZ PA	SUEZ PA	Aqua-PA	PA-American	PA-American	PA-American	Aqua-PA					
Date	Aug-16	Sep-16				20-Dec-17		29-May-18	14-Nov-18	Jun-18					
Customers															
Original Cost														295,350,000	
Depreciated Original Cost (AUS Consultants) OCLD	18,567,728	101,915,080	46,153,867			5,383,591	6,128,876	40,057,634	14,433,435	15,784,463			248,424,674	243,041,083	
Purchase Price to OCLD	1.5888	1.5601	1.6272			0.9287	1.5092	2.3965	1.5589	3.1835	1.7941	1.5688	1.836	1.817	1.817
Variance to Simple Mean	-0.2053	-0.234	-0.1669			-0.8654	-0.2849	0.6024	-0.2352	1.3894	0.6426	0.3105			
Variance to Wtd Mean	-0.2472	-0.2759	-0.2088			-0.9073	-0.3268	0.5605	-0.2771	1.3475					
Replacement Cost New less Depreciation RCNLD	30,615,410	160,301,491	86,086,756	8,899,336	7,991,234	9,236,581	8,517,587	99,589,819	23,921,473	49,940,486			485,100,173	458,973,022	
Purchase Price to RCNLD	0.9636	0.9919	0.8724	0.532	0.5963	0.5413	1.086	0.964	0.9406	1.0062	0.8494	0.975	0.9402	0.9621	0.9621
Variance to Simple Mean	0.1142	0.1425	0.023	-0.3174	-0.2531	-0.3081	0.2366	0.1146	0.0912	0.1568	0.1989	0.0604			
Variance to Wtd Mean	0.0234	0.0517	-0.0678	-0.4082	-0.3439	-0.3989	0.1458	0.0238	0.0004	0.066			0.0273	0.0200	
Customers	2,100	20320	5,434			1,248	984								

Financial Market Ratios – In the market approach based on market financial ratios the market data of companies (nine) in the water industry as reported in Value Line Investment Surveys (July 2019) were analyzed. In the analysis the companies' stock (market) and debt (book) per share are compared as a ratio to the book value per share which is detailed in the following table:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Comparable Sales Approach

Financial Basis[1]

	Industry Averages	American & Aqua Averages	American States Water	American Water	Aqua America	California Water	Connecticut Water	Consol. Water Co.	Middlesex Water	SJW Corp	York	
Price per Share			74.38	115.73	40.86	49.99	69.13	14.29	59.36	61.23	35.34	
Book value per share			15.85	34.55	15.3	15.45	25	15.1	15.75	31.05	10.4	
Market to Book Equity Ratio			4.69	3.35	2.67	3.24	2.77	0.95	3.77	1.97	3.4	
Minimum		0.95	2.67									
Mean		2.98	3.01		3.35	2.67						
Standard Deviation		1.01	0.340									
Weighted Market to Debt Ratio		3.21		14,790.99	99,570.18	30,617.17	10,844.02	3,034.07	203.91	4,496.73	4,436.34	1,876.56	169,869.97
Median		3.24	3.01									
Maximum		4.69	3.35									
Debt (Total) $s millions				416.9	8,831.0	2,652.0	940.7	261.4	-	215.2	510.9	94.1	
Outstanding Shares (millions)				36.80	180.52	215.74	48.13	12.06	15.02	16.47	28.43	12.95	
Debt per share				11.33	48.92	12.29	19.54	21.67	0	13.07	17.97	7.26	
Equity (Total) $s millions				2,736.83	20,891.44	8,815.11	2,406.22	833.93	214.64	977.57	1,741.05	457.83	
Total Capital (Debt + Equity)				3,153.73	29,722.44	11,467.11	3,346.92	1,095.33	214.64	1,192.77	2,251.95	551.93	52,996.81
				0.06	0.56	0.22	0.06	0.02	-	0.02	0.04	0.01	0.99
Market Value per Share (Equity+Debt)				85.71	164.65	53.15	69.53	90.8	14.29	72.43	79.2	42.6	
Book Value per Share (Equity+Debt)				27.18	83.47	27.59	34.99	46.67	15.1	28.82	49.02	17.66	
Market to Book (Total Capital) Ratio				3.15	1.97	1.93	1.99	1.95	0.95	2.51	1.62	2.41	
Minimum		0.95	1.93									
Mean		2.05	1.95		1.97	1.93						
Standard Deviation		0.58	0.020									
Weighted Market to Book (Debt&Equity) Ratio		2.03		9,934.24	58,553.21	22,131.52	6,660.37	2,135.90	203.91	2,993.85	3,648.16	1,330.15	107,591.31
Variance to Wtd Mean		0.1075		1.12	(0.06)	(0.10)	(0.04)	(0.08)	(1.08)	0.48	(0.41)	0.38	
Median		1.97	1.95										
Maximum		3.15	1.97										

1. Value Line Investment Survey July 12, 2019

The following table summarizes both the comparable sales and financial market ratio analysis and the Market Approach conclusion of this appraisal:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Market Approach Summary

Comparable Sales	Book Ratios	Purchase Price to Depreciated Original Cost (Book Value)	Indicated Market Value
Depreciated Original Cost (AUS Consultants) OCLD	**12,070,455.38**	1.817	21,932,017
Replacement Cost New less Depreciation RCNLD	**29,015,055.11**	0.9621	27,915,385
Average			24,923,701
Use (RCNLD)			27,915,385

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.21	
Market to Book (equity and debt)	2.03	
Use (equity and debt)	2.03	Input

Market Conclusion	Investor Purchaser Owned Value to Depreciated Original Cost (Book Value)		
Borough of Kane Authority	Borough of Kane Authority		
AUS Depreciated Original Cost	12,070,455	2.03	24,503,024

Market Value	Indicated Valus $s
Minimum	21,932,017
Mean	24,783,475
Median	24,503,024
Maximum	27,915,385
Use (RCNLD)	**27,915,385**

The market approach conclusion of this appraisal was determined to be $27,915,385.

Cost Approach Revisited – Before concluding this appraisal's fair market value, the preliminary cost approach conclusion of $29,015,055 needs to be evaluated to determine if external obsolescence exists in the preliminary replacement cost new less

depreciation conclusion of $29,015,055. The appraisal literature regarding developing a cost approach state:

> "The last step in the implementation of the cost approach is to estimate *economic obsolescence*. Economic obsolescence (sometimes called "external obsolescence") has been previously defined as the loss in value or usefulness of a property caused by factors external to the asset. These factors include increased cost of raw materials, labor, utilities (without an offsetting increase in product price); reduced demand for the product; increased competition; environmental or other regulations; or similar factors.
>
> The difficulty in measuring the full effect of economic obsolescence is one of the weaknesses of the cost approach. Because economic obsolescence is usually a function of outside influences that affect an entire business (i.e., all tangible and intangible assets) rather than individual assets or isolated groups of assets, it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic influences on value. However, the cost approach can be used to measure some forms of economic obsolescence."[15]

The above described income approach value conclusion of $17,980,846 for the Borough of Kane Authority's future sewer system and the market approach conclusion of $27,915,385; however, the income approach conclusion is affected by the Section 1329 requirement that the rate base being the lesser of the average of the UVE appraisals or the purchase price. With the purchase price $17.57 million the income approach conclusion is limited. Comparing to the preliminary cost approach conclusion of $29,015,055 to the Market Approach Conclusion of $27,915,385 indicates no significant external obsolescence exists in the cost approach conclusion of $29,015,055. Applying 0% external obsolescence to our example account of 360 Mains Force the fair market value was determined as follow:

[15] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, pp. 96-97.

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

(36)	(37)	(38)	(39)	(40)	(41)
Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	CORLD	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
360	3" Diameter Force Main	2004	31,071.74	0.00%	31,071.74
360	4" Diameter Force Main	1995	38,107.09	0.00%	38,107.09
360	Manholes Frame & Covers	1995	11,716.85	0.00%	11,716.85
360	Inflow Protectors	1995	3,124.49	0.00%	3,124.49
360	4" Diameter Force Main	1996	94,389.48	0.00%	94,389.48
360	Air Release Valve and Vault	1996	4,145.97	0.00%	4,145.97
360	2" Dia Force Main	1996	42,001.26	0.00%	42,001.26
360	1 1/2 Diameter Service FM	1996	4,747.14	0.00%	4,747.14
360	4" Diameter FM	1996	22,359.09	0.00%	22,359.09
360	1 1/2" Diameter Service FM	1996	16,478.61	0.00%	16,478.61
360	4" Diameter Force Main	1995	117,480.92	0.00%	117,480.92
360	6" Diameter Force Main	1995	59,271.62	0.00%	59,271.62
360	1 1/2 Diameter Service FM	1996	-	0.00%	-
360	4" Diameter Force Main	1995	112,148.45	0.00%	112,148.45
360	Air Release Valve Vault	1995	3,645.24	0.00%	3,645.24
360	Force Main Signs	1995	1,768.43	0.00%	1,768.43
360	Collection Sewers - Force		562,456	0.00%	562,456

Therefore, the preliminary cost approach conclusion of $29,015,055 can be considered the final cost approach conclusion as follows:

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value

36	37	38	39	40	41
(36)	(37)	(38)	(39)	(40)	(41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.0	Land & Land Rights		62,825.34	0.00%	62,825.34
354.0	Structures & Improvements		12,114,945.13	0.00%	12,114,945.13
360.0	Collection Sewers - Force		562,456.38	0.00%	562,456.38
361.0	Collection Sewers - Gravity		9,544,842.17	0.00%	9,544,842.17
363.0	Services to Customers		271,576.39	0.00%	271,576.39
364.0	Flow Measuring Devices		22,846.47	0.00%	22,846.47
371.0	Pumping Equipment		1,046,187.33	0.00%	1,046,187.33
380.0	Wastewater and Disposal Equipment		3,843,952.28	0.00%	3,843,952.28
381.0	Treatment Plant Sewers		1,423,704.62	0.00%	1,423,704.62
389.0	Other Plant and Misc Equipment		781.83	0.00%	781.83
390.0	Office Furniture and Equipment		8,325.62	0.00%	8,325.62
391.0	Transportation Equipment		21,996.48	0.00%	21,996.48
392.0	Stores Equipment		9,903.53	0.00%	9,903.53
393.0	Tools, Shop, and Garage Equipment		68,918.37	0.00%	68,918.37
394.0	Laboratory Equipment		2,216.42	0.00%	2,216.42
395.0	Power Operated Equipment		2,909.14	0.00%	2,909.14
396.0	Communications Equipment		4,714.06	0.00%	4,714.06
397.0	Miscellaneous Equipment		1,953.55	0.00%	1,953.55
Grand Total	Grand Total		**29,015,055.11**	0.00%	**29,015,055.11**

Value Conclusion

The Fair Market Value of the Borough of Kane Authority's, Pennsylvania's wastewater property, plant and equipment and its operation were determined to be $24,491,405 as follows:

Pennsylvania American Wastewater, Inc.
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach				
Financials' Net Book (3-31-2019)				
Gross Book		20,035,634		
Accumulated Depreciatiomn		10,249,417		
Net Book		9,825,885		
Inventory of Assets (7-2019)				
Original Cost ($OC)		21,023,527		
Depreciated Original Cost ($OCLD)		12,070,455		
Replacement Cost (9-30-2019)				
Replacement Cost New (COR)		55,539,558		
Depreciated Replacement Cost New (CORLD)	$	**29,015,055**		
Cost Approach Conclusion		**29,015,055**	**50%**	**14,507,528**
Income Approach				
Required Rate Increases: 25% period 2; 20% period 5; 15% period 9; 10% period 12; 10% period 15; 6% period 18 (Input 6)		17,980,846		
Income Approach Conclusion		**17,980,846**	**40%**	**7,192,338**
Market Approach				
Market Comparables (to)				
OCLD		21,932,017		
CORLD		27,915,385		
Market Financials (to)				
OCLD		24,503,024		
Market Approach Conclusion		**27,915,385**	**10%**	**2,791,539**
Appraisal Conclusion	$	**24,491,405**	**100%**	**24,491,405**
Conclusion (cost approach)	$	**29,015,055**		

As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the Borough of Kane Authority's wastewater property, plant and equipment this appraisal's conclusion of $24,491,405 is

consistent with the purpose of the appraisal. As the cost approach work papers details our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the water industry account classifications and the installation year of the property this detail it can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2018-2019

Fulfillment of Requirements for a Personal Property Appraisal and Report

- State the identity of the client and any intended users, by name or type:
  Pennsylvania American Water Company and the Pennsylvania Public Utility Commission

- State the intended use of the appraisal
  To establish the Fair Market Value of The Borough of Kane Authority's Sanitary Wastewater System

- Describe information sufficient to identify the property, real, personal, and intangible, involved in the appraisal, including the physical and economic property characteristics relevant to the assignment.

  The Borough of Kane Authority's wastewater property consists of collection mains and laterals of various sizes and types and wastewater treatment structures, improvements and equipment. The property is in good condition based on physical inspections and reviews or operating statements. The property is an operating wastewater system the economics of which were analyzed based on seven years of operating financials which were incorporated into the income approach to value analysis in this appraisal.

- State the real property interests appraised
  The Borough of Kane Authority's $34,237of land and land rights agreements necessary to access its property.

- State the type and definition of value and city the source of the definition, including whether the opinion of value is in terms of cash or of financing terms equivalent to cash, or based on non-market financing or financing with unusual conditions or incentives
  - *Market Value definition:*
    "The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." <u>The Appraisal of Real Estate</u>, 12th Edition, page 22.

- State the effective date of the appraisal and the date of the report
  The effective date of the appraisal is September 30, 2019 and the appraisal report date is November 7, 2019.

- Describe sufficient information to disclose to the client and any other intended users of the appraisal the scope of work used to develop the appraisal
  The appraisal considered all three approaches to value: the cost, income and market. Briefly the scopes of work for each are as follows:

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2018-2019
Fulfillment of Requirements for a Personal Property Appraisal and Report

Cost Approach – The cost approach utilized the trended cost method utilizing the investment inventory developed by AUS Consultants from its depreciated original cost study. The Handy Whitman Index of Public Utility Construction Costs for the water industry were used in the trending. Depreciation was assessed based on straight line age-life depreciation method based on service life expectation for each of the various account categories.

Income Approach – The income approach utilized the discounted cash flow (DCF) method; the DCF method facilitates the development of cash flows from operations as the property migrates from municipal operation to a regulated investor owned operation. The Borough of Kane Authority's operating experience was analyzed (2013-2019) in order to estimate the initial cash flows. Future customer tariff rates address the rates agreed to by the parties in the Asset Purchase Agreement between the parties. The operations were forecast for 19 periods in the future and a 20th period which is intended to reflect operation beyond that time. The discount rate was developed based on market debt and equity rates at the appraisal date.

Market Approach – The market approach was developed based on market comparable sales of Pennsylvania wastewater properties and market to book ratios developed for the water industry based on information published by Value Line Investment Surveys at the appraisal date.

Valuation Approaches Reconciliation - The appraisal conclusion was based on reconciliation of each of the approaches and the intended purpose of the appraisal.

- Clearly and conspicuously:
  - State all extraordinary assumptions and hypothetical conditions;

    There were no extraordinary assumptions or hypothetical conditions in this appraisal.

  - State that their use might have affected the assignment results

    Not applicable.

- Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment

  Not applicable.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2018-2019

Fulfillment of Requirements for a Personal Property Appraisal and Report

- Describe the information analyzed, the appraisal procedures followed, and the reasoning that supports the analyses, opinions, and conclusions

  See scope of work above.

- State the use of the real estate existing as of the date of value and the use of the real estate reflected in the appraisal – when reporting an opinion of market value, describe the support and rationale for the appraiser's opinion of the highest and best use of the real estate

- State and explain any permitted departures from specific requirements of STANDARD 1 and the reason for excluding any of the usual valuation approaches. The appraisal then becomes a limited appraisal – a limited appraisal report must contain a prominent section that clearly identifies the extent of the appraisal process performed and the departures taken

  No departures for Standard 1 were made.

- Include a signed certification in accordance with Standards Rule 2-3

  Contained in Narrative Report.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2018-2019

Fulfillment of Requirements for a Personal Property Appraisal and Report

AUS Consultants, Valuation and Depreciation Services Group certify that, to the best of its knowledge and belief:

- The statements of fact contained in this report are true and correct.

- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- AUS Consultants, Valuation and Depreciation Services Group has not performed an appraisal of the Borough of Kane Authority Sanitary Wastewater Collection System previously in the last three year.

- AUS Consultants, Valuation and Depreciation Services Group, nor its professional staff has any present or prospective interest in the property that is the subject of this report, and has no interest or bias with respect to the parties involved.

- We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

- Our engagement in this assignment is not contingent upon developing or reporting predetermined results.

- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice 2018-2019.

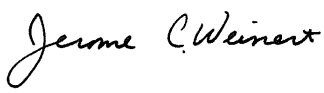
- The signers of this report has made a personal inspection of the property that is the subject of this report.

- Individuals providing significant appraisal assistance to the person signing this certification include: Scott Fogelsanger of Pennsylvania American Wastewater Company provided information obtained from the Borough of Kane Authority and the Engineer's Assessment report prepared by Gannett Fleming which was the inventory starting point of the Cost Approach.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2018-2019

Fulfillment of Requirements for a Personal Property Appraisal and Report

AUS Consultants, Depreciation & Valuation
By:



Jerome C. Weinert, ASA, P.E., CDP
Principal and Director

David A. Sheffer
Principal

Michael J. Diedrich, ASA, P.E., CDP
Certified General Appraiser
Principal

Elizabeth A. Weinert
Associate

November 7, 2019

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2018-2019

Fulfillment of Requirements for a Personal Property Appraisal and Report

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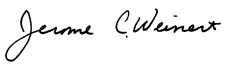
AUS Consultants, Valuation and Depreciation Services Group

By:



Jerome C. Weinert, ASA, Wisconsin P.E., CDP

Pennsylvania American Water Company

Borough of Kane Authority's Wastewater System

Appraisal Work Papers
As of September 30, 2019

Valuation Summary

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
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Replacement Cost (9-30-2019)				
Replacement Cost New (COR)		55,539,558		
Depreciated Replacement Cost New (CORLD)	**$**	**29,015,055**		
Cost Approach Conclusion		**29,015,055**	**50%**	**14,507,528**
Income Approach				
Required Rate Increases: 25% period 2; 20% period 5; 15% period 9; 10% period 12; 10% period 15; 6% period 18 (Input 6)		17,980,846		
Income Approach Conclusion		**17,980,846**	**40%**	**7,192,338**
Market Approach				
Market Comparables (to)				
OCLD		21,932,017		
CORLD		27,915,385		
Market Financials (to)				
OCLD		24,503,024		
Market Approach Conclusion		**27,915,385**	**10%**	**2,791,539**
Appraisal Conclusion	**$**	**24,491,405**	**100%**	**24,491,405**
Conclusion (cost approach)	**$**	**29,015,055**		

Pennsylvania American Water Company

Borough of Kane Authority's Wastewater System

Appraisal Work Papers
As of September 30, 2019

Cost Approach

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

0.00

Replacement Cost New (RCN)

1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6	7	8	9 (9)	10 (10)	11 (11)	12 (12)	13 (13)	14 (14)	15 (15)	16 (16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.00	353.00	Land & Land Rights						34,237.24	USBLS3			1.835	62,825.34	1.000	62,825.34
354.00	354.00	Structures & Improvements						9,477,073.12	HWW-115			2.233	21,158,500.80	1.000	21,158,500.80
360.00	360.00	Collection Sewers - Force						434,111.13	HWW-144			2.098	910,913.98	1.000	910,913.98
361.00	361.00	Collection Sewers - Gravity						5,587,425.86	HWW-144			3.127	17,472,483.03	1.000	17,472,483.03
363.00	363.00	Services to Customers						218,609.50	HWW-139			2.127	464,964.06	1.000	464,964.06
364.00	364.00	Flow Measuring Devices						25,321.55	HWW-140			1.932	48,914.86	1.000	48,914.86
371.00	371.00	Pumping Equipment						941,801.06	HWW-19			2.595	2,443,932.69	1.000	2,443,932.69
380.00	380.00	Wastewater and Disposal Equipment						3,003,588.67	HWW-117			3.371	10,126,485.78	1.000	10,126,485.78
381.00	381.00	Treatment Plant Sewers						1,093,509.61	HWW-117			2.382	2,604,456.84	1.000	2,604,456.84
389.00	389.00	Other Plant and Misc Equipment						580.00	HWW-117			2.087	1,210.46	1.000	1,210.46
390.00	390.00	Office Furniture and Equipment						34,642.35	AUST-115			1.190	41,209.98	1.000	41,209.98
391.00	391.00	Transportation Equipment						52,227.32	AUST-14			1.065	55,626.18	1.000	55,626.18
392.00	392.00	Stores Equipment						10,000.00	AUST-17			1.058	10,580.00	1.000	10,580.00
393.00	393.00	Tools, Shop, and Garage Equipment						81,973.95	AUST-17			1.268	103,909.72	1.000	103,909.72
394.00	394.00	Laboratory Equipment						7,029.79	AUST-17			1.498	10,529.65	1.000	10,529.65
395.00	395.00	Power Operated Equipment						4,065.00	AUST-18			1.091	4,434.92	1.000	4,434.92
396.00	396.00	Communications Equipment						10,375.61	USBLS2			0.951	9,866.83	1.000	9,866.83
397.00	397.00	Miscellaneous Equipment						6,955.60	AUST-18			1.253	8,713.03	1.000	8,713.03
Grand Total	**Grand Total**	**Grand Total**						**21,023,527.36**				2.642	**55,539,558.15**	1.000	**55,539,558.15**
Check totals								21,023,527.36					55,539,558.15		55,539,558.15
Difference								-					-		-

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3a)	(3b)	(3) (3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.00	Land & Land Rights	USBLS	PPI	3.00	USBLS3	1.00
354.00	Stuctures & Improvements	HW	W-1	15.00	HWW-115	1.00
360.00	Mains Force	HW	W-1	44.00	HWW-144	1.00
361.00	Mains Gravity	HW	W-1	44.00	HWW-144	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00
364.00	Flow Measuring Devices	HW	W-1	40.00	HWW-140	1.00
371.00	Pumping Equipment	HW	W-1	9.00	HWW-19	1.00
380.00	Treatment and Disposal Equipment	HW	W-1	17.00	HWW-117	1.00
381.00	Plant Sewers	HW	W-1	17.00	HWW-117	1.00
389.00	Other Plant & Misc Equip	HW	W-1	17.00	HWW-117	1.00
391.00	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00
392.00	Stores Equipment	AUS	T-1	7.00	AUST-17	1.00
393.00	Tools, Shop, & Garage Equipment	AUS	T-1	7.00	AUST-17	1.00
394.00	Laboratory Equipment	AUS	T-1	7.00	AUST-17	1.00
395.00	Power Operated Equipment	AUS	T-1	8.00	AUST-18	1.00
396.00	Communications Equipment	USBLS	PPI	2.00	USBLS2	1.00
397.00	Miscellaneous Equipment	AUS	T-1	8.00	AUST-18	1.00

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New less Depreciation (RCNLD)

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-((20)+0.5)	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.0	Land & Land Rights		23.25	62,825.34	Non-Depr	0.00				23.25	23.25	100.00%	62,825.34	1,460,689	1,460,689	1,460,689	-
354.0	Structures & Improvements		23.71	21,158,500.80	R4.0	55.00				31.76	55.46	57.26%	12,114,945.13	501,642,135	671,909,981	1,173,552,072	1,163,717,588
360.0	Collection Sewers - Force		23.51	910,913.98	R3.0	60.00				37.94	61.45	61.75%	562,456.38	21,419,383	34,560,646	55,980,028	54,654,838
361.0	Collection Sewers - Gravity		35.95	17,472,483.03	R3.0	75.00				42.40	78.35	54.63%	9,544,842.17	628,202,263	740,813,751	1,369,016,008	1,310,436,247
363.0	Services to Customers		23.53	464,964.06	R3.0	55.00				33.05	56.58	58.41%	271,576.39	10,942,616	15,366,178	26,308,794	25,573,024
364.0	Flow Measuring Devices		19.83	48,914.86	R3.0	35.00				17.16	36.99	46.71%	22,846.47	969,994	839,211	1,809,206	1,712,021
371.0	Pumping Equipment		21.42	2,443,932.69	R3.0	35.00				15.89	37.32	42.81%	1,046,187.33	52,359,384	38,845,914	91,205,296	85,537,649
380.0	Wastewater and Disposal Equipment		32.15	10,126,485.78	R3.0	45.00				18.17	50.32	37.96%	3,843,952.28	325,586,007	183,963,770	509,549,779	455,691,864
381.0	Treatment Plant Sewers		21.15	2,604,456.84	R3.0	45.00				25.41	46.56	54.66%	1,423,704.62	55,084,244	66,173,952	121,258,198	117,200,559
389.0	Other Plant and Misc Equipment		16.25	1,210.46	R3.0	45.00				29.64	45.89	64.59%	781.83	19,670	35,878	55,548	54,471
390.0	Office Furniture and Equipment		13.65	41,209.98	R3.0	12.00				2.70	16.35	20.20%	8,325.62	562,532	111,395	673,929	494,520
391.0	Transportation Equipment		12.01	55,626.18	R3.0	10.00				4.00	16.01	39.54%	21,996.48	668,166	222,384	890,551	556,262
392.0	Stores Equipment		2.25	10,580.00	R3.0	35.00				32.94	35.19	93.61%	9,903.53	23,805	348,505	372,310	370,300
393.0	Tools, Shop, and Garage Equipment		12.21	103,909.72	R3.0	35.00				23.68	35.89	66.33%	68,918.37	1,269,022	2,460,586	3,729,606	3,636,840
394.0	Laboratory Equipment		19.05	10,529.65	R3.0	20.00				4.85	23.91	21.05%	2,216.42	200,628	51,104	251,731	210,594
395.0	Power Operated Equipment		5.25	4,434.92	R3.0	15.00				10.01	15.26	65.60%	2,909.14	23,283	44,394	67,677	66,524
396.0	Communications Equipment		7.77	9,866.83	R3.0	12.00				5.94	13.70	47.78%	4,714.06	76,634	58,571	135,203	118,402
397.0	Miscellaneous Equipment		18.58	8,713.03	R3.0	20.00				5.12	23.70	22.42%	1,953.55	161,869	44,632	206,502	174,261
Grand Total			28.82	55,539,558.15		57.98				31.64	60.43	52.24%	29,015,055.11	1,600,672,324	1,757,311,541	3,356,523,127	3,220,205,964
				55,539,558.15									29,015,055.11	1,600,672,324	1,757,311,541	3,356,523,127	3,220,205,964
				-									-	-	-	-	-

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.00	Land & Land Rights	Non-Depr	0.00	0.00%	Non-Depr	0.00
354.00	Stuctures & Improvements	R4.0	55.00	0.00%	MACRS	25.00
360.00	Mains Force	R3.0	60.00	0.00%	MACRS	25.00
361.00	Mains Gravity	R3.0	75.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	55.00	0.00%	MACRS	25.00
364.00	Flow Measuring Devices	R3.0	35.00	0.00%	MACRS	25.00
371.00	Pumping Equipment	R3.0	35.00	0.00%	MACRS	25.00
380.00	Treatment and Disposal Equipment	R3.0	45.00	0.00%	MACRS	25.00
381.00	Plant Sewers	R3.0	45.00	0.00%	MACRS	25.00
389.00	Other Plant & Misc Equip	R3.0	45.00	0.00%	MACRS	25.00
391.00	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00
392.00	Stores Equipment	R3.0	35.00	0.00%	MACRS	25.00
393.00	Tools, Shop, & Garage Equipment	R3.0	35.00	0.00%	MACRS	25.00
394.00	Laboratory Equipment	R3.0	20.00	0.00%	MACRS	20.00
395.00	Power Operated Equipment	R3.0	15.00	0.00%	MACRS	15.00
396.00	Communications Equipment	R3.0	12.00	0.00%	MACRS	12.00
397.00	Miscellaneous Equipment	R3.0	20.00	0.00%	MACRS	20.00

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Fair Market Value

36	37	38	39	40	41
(36)	(37)	(38)	(39)	(40)	(41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.0	Land & Land Rights		62,825.34	0.00%	62,825.34
354.0	Structures & Improvements		12,114,945.13	0.00%	12,114,945.13
360.0	Collection Sewers - Force		562,456.38	0.00%	562,456.38
361.0	Collection Sewers - Gravity		9,544,842.17	0.00%	9,544,842.17
363.0	Services to Customers		271,576.39	0.00%	271,576.39
364.0	Flow Measuring Devices		22,846.47	0.00%	22,846.47
371.0	Pumping Equipment		1,046,187.33	0.00%	1,046,187.33
380.0	Wastewater and Disposal Equipment		3,843,952.28	0.00%	3,843,952.28
381.0	Treatment Plant Sewers		1,423,704.62	0.00%	1,423,704.62
389.0	Other Plant and Misc Equipment		781.83	0.00%	781.83
390.0	Office Furniture and Equipment		8,325.62	0.00%	8,325.62
391.0	Transportation Equipment		21,996.48	0.00%	21,996.48
392.0	Stores Equipment		9,903.53	0.00%	9,903.53
393.0	Tools, Shop, and Garage Equipment		68,918.37	0.00%	68,918.37
394.0	Laboratory Equipment		2,216.42	0.00%	2,216.42
395.0	Power Operated Equipment		2,909.14	0.00%	2,909.14
396.0	Communications Equipment		4,714.06	0.00%	4,714.06
397.0	Miscellaneous Equipment		1,953.55	0.00%	1,953.55
Grand Total	Grand Total		**29,015,055.11**	0.00%	**29,015,055.11**
			29,015,055.11		29,015,055.11

Pennsylvania American Water Company

Borough of Kane Authority's Wastewater System

Appraisal Work Papers
As of September 30, 2019

Income Approach

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail:

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Determination of the Depreciated Original Cost

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at September 30, 2019 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2019.75-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.0	Land & Land Rights		34,237.24	Non-Depr	0.00	23.25				23.25	23.25	0.00000	-	34,237.24	796,016	796,016	796,016	-
354.0	Structures & Improvements		9,477,073.12	R4.0	55.00	23.57				31.89	55.46	0.42497	4,027,463.40	5,449,609.72	223,391,900	302,205,754	525,597,654	521,239,025
360.0	Collection Sewers - Force		434,111.13	R3.0	60.00	23.40				38.04	61.44	0.38072	165,273.13	268,838.00	10,157,757	16,515,511	26,673,268	26,046,668
361.0	Collection Sewers - Gravity		5,587,425.86	R3.0	75.00	27.93				49.04	76.98	0.35969	2,009,755.72	3,577,670.14	156,082,271	274,022,488	430,104,758	419,056,947
363.0	Services to Customers		218,609.50	R3.0	55.00	23.52				33.06	56.58	0.41568	90,871.59	127,737.91	5,141,753	7,227,461	12,369,214	12,023,523
364.0	Flow Measuring Devices		25,321.55	R3.0	35.00	18.19				18.58	36.77	0.48993	12,405.69	12,915.86	460,619	470,521	931,140	886,255
371.0	Pumping Equipment		941,801.06	R3.0	35.00	20.55				16.63	37.18	0.00000	-	424,237.31	19,354,724	15,664,994	35,019,717	32,963,038
380.0	Wastewater and Disposal Equipment		3,003,588.67	R3.0	45.00	24.84				22.82	47.66	0.00000	-	1,460,849.35	74,620,333	68,539,318	143,159,650	135,161,490
381.0	Treatment Plant Sewers		1,093,509.61	R3.0	45.00	20.67				25.82	46.49	0.44368	485,170.26	608,339.35	22,607,175	28,235,403	50,842,578	49,207,933
389.0	Other Plant and Misc Equipment		580.00	R3.0	45.00	16.25				29.64	45.89	0.35410	205.38	374.62	9,425	17,191	26,616	26,100
390.0	Office Furniture and Equipment		34,642.35	R3.0	12.00	13.09				2.93	16.01	0.77965	27,008.84	7,633.51	453,402	101,381	554,782	415,708
391.0	Transportation Equipment		52,227.32	R3.0	10.00	11.51				4.16	15.67	0.00000	-	21,502.06	601,049	217,385	818,434	522,273
392.0	Stores Equipment		10,000.00	R3.0	35.00	2.25				32.94	35.19	0.06394	639.40	9,360.60	22,500	329,400	351,900	350,000
393.0	Tools, Shop, and Garage Equipment		81,973.95	R3.0	35.00	11.23				24.56	35.80	0.31037	25,442.02	56,531.93	920,892	2,013,426	2,934,318	2,869,088
394.0	Laboratory Equipment		7,029.79	R3.0	20.00	18.89				4.93	23.82	0.78576	5,523.72	1,506.07	132,789	34,652	167,441	140,596
395.0	Power Operated Equipment		4,065.00	R3.0	15.00	5.25				10.01	15.26	0.34404	1,398.52	2,666.48	21,341	40,691	62,032	60,975
396.0	Communications Equipment		10,375.61	R3.0	12.00	8.04				5.82	13.86	0.53133	5,512.83	4,862.78	83,388	60,432	143,820	124,507
397.0	Miscellaneous Equipment		6,955.60	R3.0	20.00	18.44				5.19	23.63	0.77249	5,373.15	1,582.45	128,294	36,090	164,383	139,112
Grand Total	Miscellaneous Equipment		**21,023,527.36**		57.14	24.50				34.08	58.54	0.32640	**6,862,043.65**	**12,070,455.38**	**514,985,627**	**716,528,112**	**1,230,717,723**	**1,201,233,238**
			21,023,527.36										6,862,043.65	12,070,455.38	514,985,627	716,528,112	1,230,717,723	1,201,233,238
			-										-	-	-	-	-	-

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Potential Purchaser: Investor-Owned Utility
As of September 30, 2019
Discounted Cash Flow Analysis

Discount Rate: 7.92%
Capitalization Rate: 6.31%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	1,448,318	767,855	705,514	680,463	(25,051)	(7,237)	134,475	71	553,154	0.963	532,687	532,687
2	1.5	1,824,881	786,682	709,470	1,038,199	328,729	94,970	135,398	1,884	805,947	0.892	718,905	1,251,592
3	2.5	1,843,130	805,989	713,494	1,037,141	323,647	93,502	136,329	91	807,219	0.827	667,570	1,919,162
4	3.5	1,861,561	825,790	717,586	1,035,771	318,185	91,924	137,267	92	806,488	0.766	617,770	2,536,932
5	4.5	2,252,489	846,099	721,747	1,406,390	684,643	197,793	138,214	1,955	1,068,428	0.710	758,584	3,295,516
6	5.5	2,275,014	866,928	725,980	1,408,086	682,106	197,060	139,171	112	1,071,743	0.658	705,207	4,000,723
7	6.5	2,297,764	888,291	730,199	1,409,473	679,274	196,242	139,790	114	1,073,327	0.609	653,656	4,654,379
8	7.5	2,320,742	910,203	734,624	1,410,539	675,915	195,272	140,780	115	1,074,372	0.565	607,020	5,261,399
9	8.5	2,692,061	932,678	739,125	1,759,383	1,020,258	294,753	141,778	1,856	1,320,996	0.523	690,881	5,952,280
10	9.5	2,718,982	955,732	743,701	1,763,250	1,019,549	294,548	142,784	135	1,325,783	0.485	643,005	6,595,285
11	10.5	2,746,172	979,378	748,355	1,766,794	1,018,439	294,227	143,800	135	1,328,632	0.449	596,556	7,191,841
12	11.5	3,048,251	1,003,636	753,087	2,044,615	1,291,528	373,123	144,824	1,511	1,525,157	0.416	634,465	7,826,306
13	12.5	3,078,734	1,028,518	756,642	2,050,216	1,293,574	373,713	145,858	153	1,530,492	0.386	590,770	8,417,076
14	13.5	3,109,521	1,054,043	761,517	2,055,478	1,293,961	373,825	146,899	153	1,534,601	0.357	547,853	8,964,929
15	14.5	3,451,568	1,080,227	766,472	2,371,341	1,604,869	463,647	147,952	1,710	1,758,032	0.331	581,909	9,546,838
16	15.5	3,451,568	1,107,089	771,392	2,344,479	1,573,087	454,465	149,011	-	1,741,003	0.307	534,488	10,081,326
17	16.5	3,451,568	1,134,646	776,512	2,316,922	1,540,410	445,024	150,082	-	1,721,816	0.284	488,996	10,570,322
18	17.5	3,658,662	1,162,919	781,717	2,495,743	1,714,026	495,182	151,161	1,036	1,848,364	0.263	486,120	11,056,442
19	18.5	3,658,662	1,191,925	787,006	2,466,737	1,679,731	485,274	152,249	-	1,829,214	0.244	446,328	11,502,770
20 and beyond	19.5	3,658,662	1,221,683	792,382	2,436,979	1,644,597	475,124	153,347	-	1,808,508	3.582	6,478,076	17,980,846
			19,550,311					2,871,169					
Age									19.5				
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$									0.226				
PW to Perpetuity = 1/Capitalization Rate									15.848				

$PW_{(20\text{and beyond})}$ = PW to Perpetuity * $PW\ Factor_{(19.5)}$ 3.582

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Potential Purchaser: Investor-Owned Utility
As of September 30, 2019
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Ratemaking Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) *28.89%	(7)-(8)+(6)	(9) - (6)				(11)+(12)+(13)	(9)/(14)		(10)/(16)
1	0.5	1,448,318	767,855	614,848	234,426	(168,811)	(48,769)	114,384	(120,042)	17,079,593	7,241	(26,194)	17,060,640	0.67%	11,996,334	-1.00%
2	1.5	1,824,881	786,682	605,830	226,611	205,758	59,443	372,926	146,315	16,609,161	9,125	(56,135)	16,562,151	2.25%	11,972,903	1.22%
3	2.5	1,843,130	805,989	595,116	219,058	222,967	64,415	377,610	158,552	16,150,374	9,216	(90,334)	16,069,256	2.35%	11,967,367	1.32%
4	3.5	1,861,561	825,790	587,724	211,756	236,291	68,264	379,783	168,027	15,699,917	9,308	(127,851)	15,581,374	2.44%	11,976,775	1.40%
5	4.5	2,252,489	846,099	582,813	204,697	618,880	178,794	644,783	440,086	15,255,318	11,263	(167,989)	15,098,592	4.27%	12,263,530	3.59%
6	5.5	2,275,014	866,928	578,198	197,874	632,014	182,589	647,299	449,425	14,816,291	11,375	(210,683)	14,616,983	4.43%	12,564,735	3.58%
7	6.5	2,297,764	888,291	574,814	191,278	643,381	185,873	648,786	457,508	14,381,172	11,489	(255,574)	14,137,087	4.59%	12,878,963	3.55%
8	7.5	2,320,742	910,203	566,062	184,902	659,575	190,551	653,926	469,024	13,955,795	11,604	(304,271)	13,663,128	4.79%	13,209,483	3.55%
9	8.5	2,692,061	932,678	564,480	178,739	1,016,164	293,570	901,333	722,594	13,532,997	13,460	(354,726)	13,191,731	6.83%	13,798,190	5.24%
10	9.5	2,718,982	955,732	554,231	172,781	1,036,239	299,369	909,651	736,870	13,121,454	13,595	(409,464)	12,725,585	7.15%	14,405,635	5.12%
11	10.5	2,746,172	979,378	549,432	167,021	1,050,341	303,444	913,918	746,897	12,715,727	13,730	(466,933)	12,262,524	7.45%	15,027,423	4.97%
12	11.5	3,048,251	1,003,636	541,141	161,454	1,342,020	387,710	1,115,764	954,310	12,319,314	15,241	(528,165)	11,806,390	9.45%	15,860,794	6.02%
13	12.5	3,078,734	1,028,518	535,477	156,072	1,358,667	392,519	1,122,220	966,148	11,929,599	15,394	(592,060)	11,352,933	9.88%	16,710,034	5.78%
14	13.5	3,109,521	1,054,043	525,301	150,870	1,379,307	398,482	1,131,695	980,825	11,551,100	15,547	(660,303)	10,906,344	10.38%	17,577,848	5.58%
15	14.5	3,451,568	1,080,227	522,089	145,841	1,703,411	492,116	1,357,136	1,211,295	11,176,866	17,257	(730,906)	10,463,217	12.97%	18,679,899	6.48%
16	15.5	3,451,568	1,107,089	512,612	140,980	1,690,887	488,497	1,343,370	1,202,390	10,813,168	17,257	(805,667)	10,024,758	13.40%	19,776,686	6.08%
17	16.5	3,451,568	1,134,646	508,621	136,280	1,672,021	483,047	1,325,254	1,188,974	10,454,532	17,257	(883,061)	9,588,728	13.82%	20,863,577	5.70%
18	17.5	3,658,662	1,162,919	496,779	131,737	1,867,227	539,442	1,459,522	1,327,785	10,108,817	18,293	(965,380)	9,161,730	15.93%	22,092,683	6.01%
19	18.5	3,658,662	1,191,925	490,434	127,346	1,848,957	534,164	1,442,139	1,314,793	9,770,534	18,293	(1,051,060)	8,737,767	16.50%	23,312,086	5.64%
20	19.5	3,658,662	1,221,683	480,969	123,101	1,832,909	529,527	1,426,483	1,303,382	9,442,814	18,293	(1,141,027)	8,320,080	17.15%	24,523,257	5.31%
										2,134,075.95						

Deferred Tax

Water and Wastewater Cost of Capital
Third Quarter 2019 (9-30-2019)

As a Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	30%	Market	4.45%	Market	28.89%	71.11%	0.95%
Equity	70%	Market	9.95%	Market	0.0%	100.0%	6.97%
Total Capital r	**100.0%**						**7.92%**
Growth (g)							**1.52%**
Rate without Growth: [(1+r)/(1+g)]-1							**6.31%**

Weighted Cost of Capital (Capitlization Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost (2)*(3)
Debt	30%	Market	4.45%	Market	Not Applicable	Not Applicable	1.34%
Equity	70%	Market	9.95%	Market	Not Applicable	Not Applicable	6.97%
Total Capital r	**100.0%**						**8.31%**
Growth (g)							**1.52%**
Rate without Growth: [(1+r)/(1+g)]-1							**6.69%**

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	45%	Embedded	4.37%	Embedded	Not Applicable	Not Applicable	1.97%
Equity	55%	Embedded	9.95%	Market	Not Applicable	Not Applicable	5.47%
Total Capital r	**100.0%**						**7.44%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**7.44%**

Pennsylvania American Water Company

Borough of Kane Authority's Wastewater System

Appraisal Work Papers
As of September 30, 2019

Market Approach

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Market Approach Summary

Comparable Sales	Book Ratios	Purchase Price to Depreciated Original Cost (Book Value)	Indicated Market Value
Depreciated Original Cost (AUS Consultants) OCLD	12,070,455.38	1.817	21,932,017
Replacement Cost New less Depreciation RCNLD	29,015,055.11	0.9621	27,915,385
Average			24,923,701
Use (RCNLD)			27,915,385

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.21	
Market to Book (equity and debt)	2.03	
Use (equity and debt)	2.03	Input

Market Conclusion	Investor Purchaser Owned Value to Depreciated Original Cost (Book Value)		
Borough of Kane Authority	Borough of Kane Authority		
AUS Depreciated Original Cost	12,070,455	2.03	24,503,024

Market Value	Indicated Valus $s
Minimum	21,932,017
Mean	24,783,475
Median	24,503,024
Maximum	27,915,385
Use (RCNLD)	**27,915,385**

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Comparable Sales Approach

Financial Basis[1]

	Industry Averages	American & Aqua Averages	American States Water	American Water	Aqua America	California Water	Connecticut Water	Consol. Water Co.	Middlesex Water	SJW Corp	York	
Price per Share			74.38	115.73	40.86	49.99	69.13	14.29	59.36	61.23	35.34	
Book value per share			15.85	34.55	15.3	15.45	25	15.1	15.75	31.05	10.4	
Market to Book Equity Ratio			4.69	3.35	2.67	3.24	2.77	0.95	3.77	1.97	3.4	
Minimum	0.95	2.67										
Mean	2.98	3.01		3.35	2.67							
Standard Deviation	1.01	0.340										
Weighted Market to Debt Ratio	3.21		14,790.99	99,570.18	30,617.17	10,844.02	3,034.07	203.91	4,496.73	4,436.34	1,876.56	169,869.97
Median	3.24	3.01										
Maximum	4.69	3.35										
Debt (Total) $s millions			416.9	8,831.0	2,652.0	940.7	261.4	-	215.2	510.9	94.1	
Outstanding Shares (millions)			36.80	180.52	215.74	48.13	12.06	15.02	16.47	28.43	12.95	
Debt per share			11.33	48.92	12.29	19.54	21.67	0	13.07	17.97	7.26	
Equity (Total) $s millions			2,736.83	20,891.44	8,815.11	2,406.22	833.93	214.64	977.57	1,741.05	457.83	
Total Capital (Debt + Equity)			3,153.73	29,722.44	11,467.11	3,346.92	1,095.33	214.64	1,192.77	2,251.95	551.93	52,996.81
			0.06	0.56	0.22	0.06	0.02	-	0.02	0.04	0.01	0.99
Market Value per Share (Equity+Debt)			85.71	164.65	53.15	69.53	90.8	14.29	72.43	79.2	42.6	
Book Value per Share (Equity+Debt)			27.18	83.47	27.59	34.99	46.67	15.1	28.82	49.02	17.66	
Market to Book (Total Capital) Ratio			3.15	1.97	1.93	1.99	1.95	0.95	2.51	1.62	2.41	
Minimum	0.95	1.93										
Mean	2.05	1.95		1.97	1.93							
Standard Deviation	0.58	0.020										
Weighted Market to Book (Debt&Equity) Ratio	2.03		9,934.24	58,553.21	22,131.52	6,660.37	2,135.90	203.91	2,993.85	3,648.16	1,330.15	107,591.31
Variance to Wtd Mean	0.1075		1.12	(0.06)	(0.10)	(0.04)	(0.08)	(1.08)	0.48	(0.41)	0.38	
Median	1.97	1.95										
Maximum	3.15	1.97										

1. Value Line Investment Survey July 12, 2019

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Comparable Sales Approach

Market Sales Basis

Description	New Garden Wastewater System	McKeesport Wastewater System	Limerick Wastewater System	Mahoning Water System	Mahoning Wastewater System	East Bradford Wastewater Collection System	Sadsbury Wastewater Collection System	Exeter Wastwater Collection System	Steelton Water System	Cheltenham Wastewarer Collection System	Simple Average / Standard Deviation	Remove Outliers Simple Average / Standard Deviation	Weighted Average	Remove Outliers Weighted Average / Standard Deviation	Use
System Description															
Type of System	Wastewater Collection & Treatment	Wastewater Collection & Treatment	Wastewater Collection & Treatment	Water Treatment & Distribution	Wastewater Collection & Treatment	Wastewater Collection Only	Wastewater Collection Only	Wastewater Collection & Treatment	Water Treatment & Distribution	Wastewater Collection Only					
System Attributes															
Purchase Price	29,500,000	159,000,000	75,100,000	4,734,800	4,765,200	5,000,000	9,250,000	96,000,000	22,500,000	50,250,000			456,100,000	441,600,000	
Proportion of Purchase Price to Total	6%	35%	16%	1%	1%	1%	2%	21%	5%	11%			100%	97%	
Proportion of Purchase Price to Outlier Adjusted Total	7%	36%	17%				2%	22%	5%	11%				100%	
Acquirer	Aqua PA	PA American	Aqua PA	SUEZ PA	SUEZ PA	Aqua PA	PA American	PA American	PA American	Aqua PA					
Date	Aug 16	Sep 16				20 Dec 17		29 May 18	14 Nov 18	Jun 18					
Customers															
Original Cost														295,350,000	
Depreciated Original Cost (AUS Consultants) OCLD	18,567,728	101,915,080	46,153,867			5,383,591	6,128,876	40,057,634	14,433,435	15,784,463			248,424,674	243,041,083	
Purchase Price to OCLD	1.5888	1.5601	1.6272			0.9287	1.5092	2.3965	1.5589	3.1835	1.7941	1.5688	1.836	1.817	1.817
Variance to Simple Mean	-0.2053	-0.234	-0.1669			-0.8654	-0.2849	0.6024	-0.2352	1.3894	0.6426	0.3105			
Variance to Wtd Mean	-0.2472	-0.2759	-0.2088			-0.9073	-0.3268	0.5605	-0.2771	1.3475					
Replacement Cost New less Depreciation RCNLD	30,615,410	160,301,491	86,086,756	8,899,336	7,991,234	9,236,581	8,517,587	99,589,819	23,921,473	49,940,486			485,100,173	458,973,022	
Purchase Price to RCNLD	0.9636	0.9919	0.8724	0.532	0.5963	0.5413	1.086	0.964	0.9406	1.0062	0.8494	0.975	0.9402	0.9621	0.9621
Variance to Simple Mean	0.1142	0.1425	0.023	-0.3174	-0.2531	-0.3081	0.2366	0.1146	0.0912	0.1568	0.1989	0.0604			
Variance to Wtd Mean	0.0234	0.0517	-0.0678	-0.4082	-0.3439	-0.3989	0.1458	0.0238	0.0004	0.066			0.0273	0.0200	
Customers	2,100	20320	5,434			1,248	984								

Pennsylvania American Water Company

Borough of Kane Authority's Wastewater System

Appraisal Work Papers
As of September 30, 2019

Cost Approach

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

	Column Reference in Kane OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
Original Cost (OC)	(9)	21,023,527.36
Replacement Cost New (RCN)	(16)	55,539,558.15
Replacement Cost New less Depreciation (RCNLD)	(31)	29,015,055.11
Fair Market Vaue (FMV)	(41)	29,015,055.11
Depreciated Original Cost (OCLD)		
Original Cost (OC)	(46)	21,023,527.36
Original Cost less Depreciation (OCLD)	(57)	12,070,455.38
Cost Approach Conclusion		29,015,055

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

0.00

Replacement Cost New (RCN)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	Aus Input	East Norriton Wastewater Correction system's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cost(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.00	353.00	Land & Land Rights						34,237.24	USBLS3			1.835	62,825.34	1.000	62,825.34
354.00	354.00	Structures & Improvements						9,477,073.12	HWW-115			2.233	21,158,500.80	1.000	21,158,500.80
360.00	360.00	Collection Sewers - Force						434,111.13	HWW-144			2.098	910,913.98	1.000	910,913.98
361.00	361.00	Collection Sewers - Gravity						5,587,425.86	HWW-144			3.127	17,472,483.03	1.000	17,472,483.03
363.00	363.00	Services to Customers						218,609.50	HWW-139			2.127	464,964.06	1.000	464,964.06
364.00	364.00	Flow Measuring Devices						25,321.55	HWW-140			1.932	48,914.86	1.000	48,914.86
371.00	371.00	Pumping Equipment						941,801.06	HWW-19			2.595	2,443,932.69	1.000	2,443,932.69
380.00	380.00	Wastewater and Disposal Equipment						3,003,588.67	HWW-117			3.371	10,126,485.78	1.000	10,126,485.78
381.00	381.00	Treatment Plant Sewers						1,093,509.61	HWW-117			2.382	2,604,456.84	1.000	2,604,456.84
389.00	389.00	Other Plant and Misc Equipment						580.00	HWW-117			2.087	1,210.46	1.000	1,210.46
390.00	390.00	Office Furniture and Equipment						34,642.35	AUST-115			1.190	41,209.98	1.000	41,209.98
391.00	391.00	Transportation Equipment						52,227.32	AUST-14			1.065	55,626.18	1.000	55,626.18
392.00	392.00	Stores Equipment						10,000.00	AUST-17			1.058	10,580.00	1.000	10,580.00
393.00	393.00	Tools, Shop, and Garage Equipment						81,973.95	AUST-17			1.268	103,909.72	1.000	103,909.72
394.00	394.00	Laboratory Equipment						7,029.79	AUST-17			1.498	10,529.65	1.000	10,529.65
395.00	395.00	Power Operated Equipment						4,065.00	AUST-18			1.091	4,434.92	1.000	4,434.92
396.00	396.00	Communications Equipment						10,375.61	USBLS2			0.951	9,866.83	1.000	9,866.83
397.00	397.00	Miscellaneous Equipment						6,955.60	AUST-18			1.253	8,713.03	1.000	8,713.03
Grand Total	**Grand Total**	**Grand Total**						**21,023,527.36**				2.642	**55,539,558.15**	1.000	**55,539,558.15**
Check totals								21,023,527.36					55,539,558.15		55,539,558.15
Difference								-					-		-

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
September 30, 2019

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.00	Land & Land Rights	USBLS	PPI	3.00	USBLS3	1.00
354.00	Stuctures & Improvements	HW	W-1	15.00	HWW-115	1.00
360.00	Mains Force	HW	W-1	44.00	HWW-144	1.00
361.00	Mains Gravity	HW	W-1	44.00	HWW-144	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00
364.00	Flow Measuring Devices	HW	W-1	40.00	HWW-140	1.00
371.00	Pumping Equipment	HW	W-1	9.00	HWW-19	1.00
380.00	Treatment and Disposal Equipment	HW	W-1	17.00	HWW-117	1.00
381.00	Plant Sewers	HW	W-1	17.00	HWW-117	1.00
389.00	Other Plant & Misc Equip	HW	W-1	17.00	HWW-117	1.00
391.00	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00
392.00	Stores Equipment	AUS	T-1	7.00	AUST-17	1.00
393.00	Tools, Shop, & Garage Equipment	AUS	T-1	7.00	AUST-17	1.00
394.00	Laboratory Equipment	AUS	T-1	7.00	AUST-17	1.00
395.00	Power Operated Equipment	AUS	T-1	8.00	AUST-18	1.00
396.00	Communications Equipment	USBLS	PPI	2.00	USBLS2	1.00
397.00	Miscellaneous Equipment	AUS	T-1	8.00	AUST-18	1.00

Borough of Kane Authority
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Replacement Cost New less Depreciation (RCNLD)

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (26)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.0	Land & Land Rights		23.25	62,825.34	Non-Depr	0.00				23.25	23.25	100.00%	62,825.34	1,460,689	1,460,689	1,460,689	-
354.0	Structures & Improvements		23.71	21,158,500.80	R4.0	55.00				31.76	55.46	57.26%	12,114,945.13	501,642,135	671,909,981	1,173,552,072	1,163,717,588
360.0	Collection Sewers - Force		23.51	910,913.98	R3.0	60.00				37.94	61.45	61.75%	562,456.38	21,419,383	34,560,646	55,980,028	54,654,838
361.0	Collection Sewers - Gravity		35.95	17,472,483.03	R3.0	75.00				42.40	78.35	54.63%	9,544,842.17	628,202,263	740,813,751	1,369,016,008	1,310,436,247
363.0	Services to Customers		23.53	464,964.06	R3.0	55.00				33.05	56.58	58.41%	271,576.39	10,942,616	15,366,178	26,308,794	25,573,024
364.0	Flow Measuring Devices		19.83	48,914.86	R3.0	35.00				17.16	36.99	46.71%	22,846.47	969,994	839,211	1,809,206	1,712,021
371.0	Pumping Equipment		21.42	2,443,932.69	R3.0	35.00				15.89	37.32	42.81%	1,046,187.33	52,359,384	38,845,914	91,205,296	85,537,649
380.0	Wastewater and Disposal Equipment		32.15	10,126,485.78	R3.0	45.00				18.17	50.32	37.96%	3,843,952.28	325,586,007	183,963,770	509,549,779	455,691,864
381.0	Treatment Plant Sewers		21.15	2,604,456.84	R3.0	45.00				25.41	46.56	54.66%	1,423,704.62	55,084,244	66,173,952	121,258,198	117,200,559
389.0	Other Plant and Misc Equipment		16.25	1,210.46	R3.0	45.00				29.64	45.89	64.59%	781.83	19,670	35,878	55,548	54,471
390.0	Office Furniture and Equipment		13.65	41,209.98	R3.0	12.00				2.70	16.35	20.20%	8,325.62	562,532	111,395	673,929	494,520
391.0	Transportation Equipment		12.01	55,626.18	R3.0	10.00				4.00	16.01	39.54%	21,996.48	668,166	222,384	890,551	556,262
392.0	Stores Equipment		2.25	10,580.00	R3.0	35.00				32.94	35.19	93.61%	9,903.53	23,805	348,505	372,310	370,300
393.0	Tools, Shop, and Garage Equipment		12.21	103,909.72	R3.0	35.00				23.68	35.89	66.33%	68,918.37	1,269,022	2,460,586	3,729,606	3,636,840
394.0	Laboratory Equipment		19.05	10,529.65	R3.0	20.00				4.85	23.91	21.05%	2,216.42	200,628	51,104	251,731	210,594
395.0	Power Operated Equipment		5.25	4,434.92	R3.0	15.00				10.01	15.26	65.60%	2,909.14	23,283	44,394	67,677	66,524
396.0	Communications Equipment		7.77	9,866.83	R3.0	12.00				5.94	13.70	47.78%	4,714.06	76,634	58,571	135,203	118,402
397.0	Miscellaneous Equipment		18.58	8,713.03	R3.0	20.00				5.12	23.70	22.42%	1,953.55	161,869	44,632	206,502	174,261
Grand Total			28.82	55,539,558.15		57.98				31.64	60.43	52.24%	29,015,055.11	1,600,672,324	1,757,311,541	3,356,523,127	3,220,205,964
				55,539,558.15									29,015,055.11	1,600,672,324	1,757,311,541	3,356,523,127	3,220,205,964

Pennsylvania American Water Company
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Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.00	Land & Land Rights	Non-Depr	0.00	0.00%	Non-Depr	0.00
354.00	Stuctures & Improvements	R4.0	55.00	0.00%	MACRS	25.00
360.00	Mains Force	R3.0	60.00	0.00%	MACRS	25.00
361.00	Mains Gravity	R3.0	75.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	55.00	0.00%	MACRS	25.00
364.00	Flow Measuring Devices	R3.0	35.00	0.00%	MACRS	25.00
371.00	Pumping Equipment	R3.0	35.00	0.00%	MACRS	25.00
380.00	Treatment and Disposal Equipment	R3.0	45.00	0.00%	MACRS	25.00
381.00	Plant Sewers	R3.0	45.00	0.00%	MACRS	25.00
389.00	Other Plant & Misc Equip	R3.0	45.00	0.00%	MACRS	25.00
391.00	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00
392.00	Stores Equipment	R3.0	35.00	0.00%	MACRS	25.00
393.00	Tools, Shop, & Garage Equipment	R3.0	35.00	0.00%	MACRS	25.00
394.00	Laboratory Equipment	R3.0	20.00	0.00%	MACRS	20.00
395.00	Power Operated Equipment	R3.0	15.00	0.00%	MACRS	15.00
396.00	Communications Equipment	R3.0	12.00	0.00%	MACRS	12.00
397.00	Miscellaneous Equipment	R3.0	20.00	0.00%	MACRS	20.00

Borough of Kane Authority
Wastewater Collection and Treatment System
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Fair Market Value

36	37	38	39	40	41
(36)	(37)	(38)	(39)	(40)	(41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.0	Land & Land Rights		62,825.34	0.00%	62,825.34
354.0	Structures & Improvements		12,114,945.13	0.00%	12,114,945.13
360.0	Collection Sewers - Force		562,456.38	0.00%	562,456.38
361.0	Collection Sewers - Gravity		9,544,842.17	0.00%	9,544,842.17
363.0	Services to Customers		271,576.39	0.00%	271,576.39
364.0	Flow Measuring Devices		22,846.47	0.00%	22,846.47
371.0	Pumping Equipment		1,046,187.33	0.00%	1,046,187.33
380.0	Wastewater and Disposal Equipment		3,843,952.28	0.00%	3,843,952.28
381.0	Treatment Plant Sewers		1,423,704.62	0.00%	1,423,704.62
389.0	Other Plant and Misc Equipment		781.83	0.00%	781.83
390.0	Office Furniture and Equipment		8,325.62	0.00%	8,325.62
391.0	Transportation Equipment		21,996.48	0.00%	21,996.48
392.0	Stores Equipment		9,903.53	0.00%	9,903.53
393.0	Tools, Shop, and Garage Equipment		68,918.37	0.00%	68,918.37
394.0	Laboratory Equipment		2,216.42	0.00%	2,216.42
395.0	Power Operated Equipment		2,909.14	0.00%	2,909.14
396.0	Communications Equipment		4,714.06	0.00%	4,714.06
397.0	Miscellaneous Equipment		1,953.55	0.00%	1,953.55
Grand Total	Grand Total		**29,015,055.11**	0.00%	**29,015,055.11**
			29,015,055.11		29,015,055.11

Borough of Kane Authority
Wastewater Collection and Treatment System
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Determination of the Depreciated Original Cost

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at September 30, 2019 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2019.75-I(45)+0.5)	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.0	Land & Land Rights		34,237.24	Non-Depr	0.00	23.25				23.25	23.25	0.00000	-	34,237.24	796,016	796,016	796,016	-
354.0	Structures & Improvements		9,477,073.12	R4.0	55.00	23.57				31.89	55.46	0.42497	4,027,463.40	5,449,609.72	223,391,900	302,205,754	525,597,654	521,239,025
360.0	Collection Sewers - Force		434,111.13	R3.0	60.00	23.40				38.04	61.44	0.38072	165,273.13	268,838.00	10,157,757	16,515,511	26,673,268	26,046,668
361.0	Collection Sewers - Gravity		5,587,425.86	R3.0	75.00	27.93				49.04	76.98	0.35969	2,009,755.72	3,577,670.14	156,082,271	274,022,488	430,104,758	419,056,947
363.0	Services to Customers		218,609.50	R3.0	55.00	23.52				33.06	56.58	0.41568	90,871.59	127,737.91	5,141,753	7,227,461	12,369,214	12,023,523
364.0	Flow Measuring Devices		25,321.55	R3.0	35.00	18.19				18.58	36.77	0.48993	12,405.69	12,915.86	460,619	470,521	931,140	886,255
371.0	Pumping Equipment		941,801.06	R3.0	35.00	20.55				16.63	37.18	0.00000	-	424,237.31	19,354,724	15,664,994	35,019,717	32,963,038
380.0	Wastewater and Disposal Equipment		3,003,588.67	R3.0	45.00	24.84				22.82	47.66	0.00000	-	1,460,849.35	74,620,333	68,539,318	143,159,650	135,161,490
381.0	Treatment Plant Sewers		1,093,509.61	R3.0	45.00	20.67				25.82	46.49	0.44368	485,170.26	608,339.35	22,607,175	28,235,403	50,842,578	49,207,933
389.0	Other Plant and Misc Equipment		580.00	R3.0	45.00	16.25				29.64	45.89	0.35410	205.38	374.62	9,425	17,191	26,616	26,100
390.0	Office Furniture and Equipment		34,642.35	R3.0	12.00	13.09				2.93	16.01	0.77965	27,008.84	7,633.51	453,402	101,381	554,782	415,708
391.0	Transportation Equipment		52,227.32	R3.0	10.00	11.51				4.16	15.67	0.00000	-	21,502.06	601,049	217,385	818,434	522,273
392.0	Stores Equipment		10,000.00	R3.0	35.00	2.25				32.94	35.19	0.06394	639.40	9,360.60	22,500	329,400	351,900	350,000
393.0	Tools, Shop, and Garage Equipment		81,973.95	R3.0	35.00	11.23				24.56	35.80	0.31037	25,442.02	56,531.93	920,892	2,013,426	2,934,318	2,869,088
394.0	Laboratory Equipment		7,029.79	R3.0	20.00	18.89				4.93	23.82	0.78576	5,523.72	1,506.07	132,789	34,652	167,441	140,596
395.0	Power Operated Equipment		4,065.00	R3.0	15.00	5.25				10.01	15.26	0.34404	1,398.52	2,666.48	21,341	40,691	62,032	60,975
396.0	Communications Equipment		10,375.61	R3.0	12.00	8.04				5.82	13.86	0.53133	5,512.83	4,862.78	83,388	60,432	143,820	124,507
397.0	Miscellaneous Equipment		6,955.60	R3.0	20.00	18.44				5.19	23.63	0.77249	5,373.15	1,582.45	128,294	36,090	164,383	139,112
Grand Total	Miscellaneous Equipment		**21,023,527.36**		57.14	24.50				34.08	58.54	0.32640	**6,862,043.65**	**12,070,455.38**	**514,985,627**	**716,528,112**	**1,230,717,723**	**1,201,233,238**
			21,023,527.36										6,862,043.65	12,070,455.38	514,985,627	716,528,112	1,230,717,723	1,201,233,238
			-										-	-	-	-	-	-

Pennsylvania American Water Company

Borough of Kane Authority's Wastewater System

Appraisal Work Papers
As of September 30, 2019

Cost Approach
Replacement Cost New

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

Borough of Kane Authority
Wastewater Collection and Treatment System
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0.00

Replacement Cost New (RCN)

1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6	7	8	9 (9)	10 (10)	11 (11)	12 (12)	13 (13)	14 (14)	15 (15)	16 (16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	ALIS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	ALIS Input				Eng Assmt	ALIS Input	Cost Indices Lookup Costs(10) & (5)	Cost Indices Lookup Costs(10) & Study YR	Col (12) / (11)	Col (5) * (13)	ALIS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.00	353.00	Land & Land Rights						34,237.24	USBLS3			1.835	62,825.34	1.000	62,825.34
354.00	354.00	Structures & Improvements						9,477,073.12	HWW-115			2.233	21,158,500.80	1.000	21,158,500.80
360.00	360.00	Collection Sewers - Force						434,111.13	HWW-144			2.098	910,913.98	1.000	910,913.98
361.00	361.00	Collection Sewers - Gravity						5,587,425.86	HWW-144			3.127	17,472,483.03	1.000	17,472,483.03
363.00	363.00	Services to Customers						218,609.50	HWW-139			2.127	464,964.06	1.000	464,964.06
364.00	364.00	Flow Measuring Devices						25,321.55	HWW-140			1.932	48,914.86	1.000	48,914.86
371.00	371.00	Pumping Equipment						941,801.06	HWW-19			2.595	2,443,932.69	1.000	2,443,932.69
380.00	380.00	Wastewater and Disposal Equipment						3,003,588.67	HWW-117			3.371	10,126,485.78	1.000	10,126,485.78
381.00	381.00	Treatment Plant Sewers						1,093,509.61	HWW-117			2.382	2,604,456.84	1.000	2,604,456.84
389.00	389.00	Other Plant and Misc Equipment						580.00	HWW-117			2.087	1,210.46	1.000	1,210.46
390.00	390.00	Office Furniture and Equipment						34,642.35	AUST-115			1.190	41,209.98	1.000	41,209.98
391.00	391.00	Transportation Equipment						52,227.32	AUST-14			1.065	55,626.18	1.000	55,626.18
392.00	392.00	Stores Equipment						10,000.00	AUST-17			1.058	10,580.00	1.000	10,580.00
393.00	393.00	Tools, Shop, and Garage Equipment						81,973.95	AUST-17			1.268	103,909.72	1.000	103,909.72
394.00	394.00	Laboratory Equipment						7,029.79	AUST-17			1.498	10,529.65	1.000	10,529.65
395.00	395.00	Power Operated Equipment						4,065.00	AUST-18			1.091	4,434.92	1.000	4,434.92
396.00	396.00	Communications Equipment						10,375.61	USBLS2			0.951	9,866.83	1.000	9,866.83
397.00	397.00	Miscellaneous Equipment						6,955.60	AUST-18			1.253	8,713.03	1.000	8,713.03
Grand Total	**Grand Total**	**Grand Total**						**21,023,527.36**				2.642	**55,539,558.15**	1.000	**55,539,558.15**
Check totals								21,023,527.36					55,539,558.15		55,539,558.15
Difference								-					-		-

Pennsylvania American Water Company
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Investor-Owned Utility
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	Aus Input	Last Normalized Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	Aus Input				Eng Assmnt	Aus Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	Aus Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353 - Land and Land Rights															
353	353	Land & ROW	1996	1996				34,237.24	USBLS3	100	183.5	1.835	62,825	1.000	62,825
353		Land & Land Rights	SUB-TOTAL =		0	34,237.24	0	34,237.24					62,825		62,825
354 - Structures and Improvements															
354	354	Various	1993	1993	Borough of Kane Original Cost of Inventory/Assets	9,799.64	0	9,799.64	HWW-115	294	717	2.439	23,901	1.000	23,901
354	354	Door	2003	2003	Borough of Kane Original Cost of Inventory/Assets	1,222.75	0	1,222.75	HWW-115	393.5	717	1.822	2,228	1.000	2,228
354	354	3 yard rear load dumpster	2008	2008	Borough of Kane Original Cost of Inventory/Assets	1,030.00	0	1,030.00	HWW-115	538.3	717	1.332	1,372	1.000	1,372
354	354	Reznor Heater	2009	2009	Borough of Kane Original Cost of Inventory/Assets	1,409.00	0	1,409.00	HWW-115	543.8	717	1.318	1,857	1.000	1,857
354	354	Contract Bonds	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	52,670.00	0	52,670.00	HWW-115	316	717	2.269	119,508	1.000	119,508
354	354	Mobilization	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	205,862.00	0	205,862.00	HWW-115	316	717	2.269	467,101	1.000	467,101
354	354	Soil and Erosion Control	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	7,064.00	0	7,064.00	HWW-115	316	717	2.269	16,028	1.000	16,028
354	354	Relocation of Exist Pipe	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	20,248.00	0	20,248.00	HWW-115	316	717	2.269	45,943	1.000	45,943
354	354	Excavation (SBR)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	112,749.00	0	112,749.00	HWW-115	316	717	2.269	255,827	1.000	255,827
354	354	Backfill (SBR)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	12,590.00	0	12,590.00	HWW-115	316	717	2.269	28,567	1.000	28,567
354	354	Stone Base (SBR)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,320.00	0	5,320.00	HWW-115	316	717	2.269	12,071	1.000	12,071
354	354	Concrete (SBR)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	369,702.00	0	369,702.00	HWW-115	316	717	2.269	838,854	1.000	838,854
354	354	Reinforcing (SBR)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	172,312.00	0	172,312.00	HWW-115	316	717	2.269	390,976	1.000	390,976
354	354	Handrail (SBR)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	33,927.00	0	33,927.00	HWW-115	316	717	2.269	76,980	1.000	76,980
354	354	Nosings (SBR)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,287.00	0	1,287.00	HWW-115	316	717	2.269	2,920	1.000	2,920
354	354	Excavation (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	31,500.00	0	31,500.00	HWW-115	316	717	2.269	71,474	1.000	71,474
354	354	Backfill (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,475.00	0	1,475.00	HWW-115	316	717	2.269	3,347	1.000	3,347
354	354	Concrete (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	34,510.00	0	34,510.00	HWW-115	316	717	2.269	78,303	1.000	78,303
354	354	Reinforcing (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	15,470.00	0	15,470.00	HWW-115	316	717	2.269	35,101	1.000	35,101
354	354	Handrail (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,064.00	0	2,064.00	HWW-115	316	717	2.269	4,683	1.000	4,683
354	354	Nosings (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,036.00	0	1,036.00	HWW-115	316	717	2.269	2,351	1.000	2,351
354	354	Lintels, A.B.s (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	245.00	0	245.00	HWW-115	316	717	2.269	556	1.000	556
354	354	Masonry (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,250.00	0	2,250.00	HWW-115	316	717	2.269	5,105	1.000	5,105
354	354	Roof System (Trusses, shingles, plywood, etc.) (W.A.S. Pump Stati	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,690.00	0	3,690.00	HWW-115	316	717	2.269	8,373	1.000	8,373
354	354	Hatches (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,272.00	0	3,272.00	HWW-115	316	717	2.269	7,424	1.000	7,424
354	354	Insulation (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,880.00	0	2,880.00	HWW-115	316	717	2.269	6,535	1.000	6,535
354	354	Door, Frame, Hardware (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,245.00	0	1,245.00	HWW-115	316	717	2.269	2,825	1.000	2,825
354	354	Fiberglass Specialties (portable safety rail) (W.A.S. Pump Station)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	Excavation (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,632.00	0	2,632.00	HWW-115	316	717	2.269	5,972	1.000	5,972

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)			(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed			Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
							OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input			Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input			Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NAIUC Code	NARUC Code	Asset Description	Service Date	Year Installed			Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Backfill (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	460.00	0	460.00	HWW-115	316	717	2.269	1,044	1.000	1,044
354	354	Concrete (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	77,088.00	0	77,088.00	HWW-115	316	717	2.269	174,913	1.000	174,913
354	354	Reinforcing (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	25,942.00	0	25,942.00	HWW-115	316	717	2.269	58,862	1.000	58,862
354	354	Masonry (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	23,859.75	0	23,859.75	HWW-115	316	717	2.269	54,138	1.000	54,138
354	354	Handrail (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,888.00	0	3,888.00	HWW-115	316	717	2.269	8,822	1.000	8,822
354	354	Nosings (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,147.50	0	1,147.50	HWW-115	316	717	2.269	2,604	1.000	2,604
354	354	Lintels, A.B.s (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,079.00	0	2,079.00	HWW-115	316	717	2.269	4,717	1.000	4,717
354	354	Cast-In-Place (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,460.00	0	1,460.00	HWW-115	316	717	2.269	3,313	1.000	3,313
354	354	Bar Screen - Coarse (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	883.00	0	883.00	HWW-115	316	717	2.269	2,004	1.000	2,004
354	354	Bar Screen - Fine (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	976.00	0	976.00	HWW-115	316	717	2.269	2,215	1.000	2,215
354	354	Precast Plank (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,688.00	0	2,688.00	HWW-115	316	717	2.269	6,099	1.000	6,099
354	354	Roof System (Trusses, shingles, plywood, etc.) (Preliminary Treatm	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	46,944.00	0	46,944.00	HWW-115	316	717	2.269	106,516	1.000	106,516
354	354	Door, Frame, Hardware (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,980.00	0	4,980.00	HWW-115	316	717	2.269	11,300	1.000	11,300
354	354	Overhead Door (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,100.00	0	5,100.00	HWW-115	316	717	2.269	11,572	1.000	11,572
354	354	Aluminum Windows (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	7,980.00	0	7,980.00	HWW-115	316	717	2.269	18,107	1.000	18,107
354	354	Grating/Supports (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	15,640.00	0	15,640.00	HWW-115	316	717	2.269	35,487	1.000	35,487
354	354	Embedding Angle (Preliminary Treatment Struct.)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,660.00	0	2,660.00	HWW-115	316	717	2.269	6,036	1.000	6,036
354	354	Excavation (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,043.00	0	1,043.00	HWW-115	316	717	2.269	2,367	1.000	2,367
354	354	Backfill (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	230.00	0	230.00	HWW-115	316	717	2.269	522	1.000	522
354	354	Concrete (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	9,266.00	0	9,266.00	HWW-115	316	717	2.269	21,025	1.000	21,025
354	354	Reinforcing (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,666.00	0	1,666.00	HWW-115	316	717	2.269	3,780	1.000	3,780
354	354	Masonry (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	20,662.50	0	20,662.50	HWW-115	316	717	2.269	46,883	1.000	46,883
354	354	Misc. Metals (Lintels, A.B.s) (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,031.25	0	1,031.25	HWW-115	316	717	2.269	2,340	1.000	2,340
354	354	Roof System (Trusses, shingles, plywood, etc.) (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	22,960.00	0	22,960.00	HWW-115	316	717	2.269	52,096	1.000	52,096
354	354	Door, Frame, Hardware (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,200.00	0	5,200.00	HWW-115	316	717	2.269	11,799	1.000	11,799
354	354	Aluminum Windows (Blower Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,660.00	0	2,660.00	HWW-115	316	717	2.269	6,036	1.000	6,036
354	354	Excavation (Aerobic Digesters)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	23,148.00	0	23,148.00	HWW-115	316	717	2.269	52,523	1.000	52,523
354	354	Backfill (Aerobic Digesters)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,840.00	0	4,840.00	HWW-115	316	717	2.269	10,982	1.000	10,982
354	354	Concrete (Aerobic Digesters)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	127,687.00	0	127,687.00	HWW-115	316	717	2.269	289,722	1.000	289,722
354	354	Reinforcing (Aerobic Digesters)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	57,596.00	0	57,596.00	HWW-115	316	717	2.269	130,685	1.000	130,685
354	354	Handrail (Aerobic Digesters)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,053.00	0	3,053.00	HWW-115	316	717	2.269	6,927	1.000	6,927

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)					(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed					Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
									OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input					Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	Last Nemeon Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input					Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (9) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Nosings (Aerobic Digesters)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	550.00	0	550.00	HWW-115	316	717	2.269	1,248	1.000	1,248
354	354	Excavation (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	833.00	0	833.00	HWW-115	316	717	2.269	1,890	1.000	1,890
354	354	Backfill (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	420.00	0	420.00	HWW-115	316	717	2.269	953	1.000	953
354	354	Concrete - Footers (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,930.00	0	4,930.00	HWW-115	316	717	2.269	11,186	1.000	11,186
354	354	Reinforcing - Footers (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,428.00	0	1,428.00	HWW-115	316	717	2.269	3,240	1.000	3,240
354	354	Concrete - Slab (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,940.00	0	5,940.00	HWW-115	316	717	2.269	13,478	1.000	13,478
354	354	Reinforcing - Slab (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	952.00	0	952.00	HWW-115	316	717	2.269	2,160	1.000	2,160
354	354	Masonry (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,171.00	0	3,171.00	HWW-115	316	717	2.269	7,195	1.000	7,195
354	354	Metal Building (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	42,802.00	0	42,802.00	HWW-115	316	717	2.269	97,118	1.000	97,118
354	354	Door, Frame, Hardware (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,245.00	0	1,245.00	HWW-115	316	717	2.269	2,825	1.000	2,825
354	354	Overhead Door (Garage)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,100.00	0	5,100.00	HWW-115	316	717	2.269	11,572	1.000	11,572
354	354	Concrete (Effluent Water Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,602.00	0	1,602.00	HWW-115	316	717	2.269	3,635	1.000	3,635
354	354	Reinforcing (Effluent Water Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	952.00	0	952.00	HWW-115	316	717	2.269	2,160	1.000	2,160
354	354	Masonry (Effluent Water Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,575.00	0	3,575.00	HWW-115	316	717	2.269	8,112	1.000	8,112
354	354	Misc. Metals: Handrails (Effluent Water Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,420.00	0	2,420.00	HWW-115	316	717	2.269	5,491	1.000	5,491
354	354	Roof System (Trusses, shingles, plywood, etc.) (Effluent Water Buil	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,713.00	0	5,713.00	HWW-115	316	717	2.269	12,963	1.000	12,963
354	354	Hatches (Effluent Water Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,695.00	0	1,695.00	HWW-115	316	717	2.269	3,846	1.000	3,846
354	354	Door, Frame, Hardware (Effluent Water Building)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,245.00	0	1,245.00	HWW-115	316	717	2.269	2,825	1.000	2,825
354	354	Concrete (W.A.S. Holding Tank)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	12,921.00	0	12,921.00	HWW-115	316	717	2.269	29,318	1.000	29,318
354	354	Concrete (Chlorine Contact Tank)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	70,632.00	0	70,632.00	HWW-115	316	717	2.269	160,264	1.000	160,264
354	354	Reinforcing (Chlorine Contact Tank)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	19,992.00	0	19,992.00	HWW-115	316	717	2.269	45,362	1.000	45,362
354	354	Handrail (Chlorine Contact Tank)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	6,829.50	0	6,829.50	HWW-115	316	717	2.269	15,496	1.000	15,496
354	354	Rework Walkways (Chlorine Contact Tank)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,198.00	0	3,198.00	HWW-115	316	717	2.269	7,256	1.000	7,256
354	354	Demolition (Control Building Renovations)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	546.00	0	546.00	HWW-115	316	717	2.269	1,239	1.000	1,239
354	354	Concrete (Control Building Renovations)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	232.00	0	232.00	HWW-115	316	717	2.269	526	1.000	526
354	354	Misc. Metals (Control Building Renovations)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,242.00	0	2,242.00	HWW-115	316	717	2.269	5,087	1.000	5,087
354	354	Rubber Flooring (Control Building Renovations)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,278.50	0	5,278.50	HWW-115	316	717	2.269	11,977	1.000	11,977
354	354	Lab Furnishings/Apparatus (Control Building Renovations)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	13,038.00	0	13,038.00	HWW-115	316	717	2.269	29,583	1.000	29,583
354	354	Misc. Metals: Ladder/Platform (Existing Digester Tank)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,905.00	0	1,905.00	HWW-115	316	717	2.269	4,322	1.000	4,322
354	354	Demo at Headworks	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,158.00	0	3,158.00	HWW-115	316	717	2.269	7,166	1.000	7,166
354	354	Grading	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,159.00	0	3,159.00	HWW-115	316	717	2.269	7,168	1.000	7,168

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(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	Last Norman Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Seeding	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	8,424.00	0	8,424.00	HWW-115	316	717	2.269	19,114	1.000	19,114
354	354	Fencing	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,675.00	0	4,675.00	HWW-115	316	717	2.269	10,608	1.000	10,608
354	354	Paving (Bituminous & Stone)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	77,275.00	0	77,275.00	HWW-115	316	717	2.269	175,337	1.000	175,337
354	354	Ceiling Systems	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	25,920.00	0	25,920.00	HWW-115	316	717	2.269	58,812	1.000	58,812
354	354	Painting	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	89,500.00	0	89,500.00	HWW-115	316	717	2.269	203,076	1.000	203,076
354	354	Catch Basins	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	12,375.00	0	12,375.00	HWW-115	316	717	2.269	28,079	1.000	28,079
354	354	Lavatory	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,085.00	0	1,085.00	HWW-115	316	717	2.269	2,462	1.000	2,462
354	354	Water Heater	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	806.00	0	806.00	HWW-115	316	717	2.269	1,829	1.000	1,829
354	354	Floor Drains	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,295.00	0	1,295.00	HWW-115	316	717	2.269	2,938	1.000	2,938
354	354	Hydropneumatic Tank	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,420.00	0	5,420.00	HWW-115	316	717	2.269	12,298	1.000	12,298
354	354	Trench Excavation	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	40,024.00	0	40,024.00	HWW-115	316	717	2.269	90,814	1.000	90,814
354	354	Trench Backfill	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	40,024.00	0	40,024.00	HWW-115	316	717	2.269	90,814	1.000	90,814
354	354	Change Order No. 1	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	(12,600.00)	0	(12,600.00)	HWW-115	316	717	2.269	(28,589)	1.000	(28,589)
354	354	Change Order No. 2	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,759.02	0	5,759.02	HWW-115	316	717	2.269	13,067	1.000	13,067
354	354	Change Order No. 4	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	19,949.47	0	19,949.47	HWW-115	316	717	2.269	45,265	1.000	45,265
354	354	Change Order No. 5	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	22,029.44	0	22,029.44	HWW-115	316	717	2.269	49,985	1.000	49,985
354	354	Change Order No. 6	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	8,572.00	0	8,572.00	HWW-115	316	717	2.269	19,450	1.000	19,450
354	354	Change Order No. 7	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,486.27	0	4,486.27	HWW-115	316	717	2.269	10,179	1.000	10,179
354	354	Change Order No. 8	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,902.45	0	2,902.45	HWW-115	316	717	2.269	6,586	1.000	6,586
354	354	Change Order No. 9	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	901.62	0	901.62	HWW-115	316	717	2.269	2,046	1.000	2,046
354	354	Change Order No. 10	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,968.21	0	1,968.21	HWW-115	316	717	2.269	4,466	1.000	4,466
354	354	Change Order No. 11	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	22,000.00	0	22,000.00	HWW-115	316	717	2.269	49,918	1.000	49,918
354	354	Change Order No. 12	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	25,020.00	0	25,020.00	HWW-115	316	717	2.269	56,770	1.000	56,770
354	354	Change Order No. 13	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,058.11	0	1,058.11	HWW-115	316	717	2.269	2,401	1.000	2,401
354	354	Change Order No. 14	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	78,000.00	0	78,000.00	HWW-115	316	717	2.269	176,982	1.000	176,982
354	354	Change Order No. 15	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	20,462.94	0	20,462.94	HWW-115	316	717	2.269	46,430	1.000	46,430
354	354	Change Order No. 16	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	7,717.28	0	7,717.28	HWW-115	316	717	2.269	17,511	1.000	17,511
354	354	Select Backfill	2004	2004	Contract 2003-2 - General/Mechanical Construction	11,750.00	0	11,750.00	HWW-115	420.8	717	1.704	20,022	1.000	20,022
354	354	Straw Bale Barrier/Filter Fabric	2004	2004	Contract 2003-2 - General/Mechanical Construction	12,510.00	0	12,510.00	HWW-115	420.8	717	1.704	21,317	1.000	21,317
354	354	Exploratory Excavation	2004	2004	Contract 2003-2 - General/Mechanical Construction	4,500.00	0	4,500.00	HWW-115	420.8	717	1.704	7,668	1.000	7,668
354	354	Mobilization/Demobilization	2004	2004	Contract 2003-2 - General/Mechanical Construction	5,500.00	0	5,500.00	HWW-115	420.8	717	1.704	9,372	1.000	9,372

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)			(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed			Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
							OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input			Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input			Eng Assmt	AUS Input	Cost Indices Lookup Data(10) & (5)	Cost Indices Lookup Data(10) & Study Yr	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed			Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Electrical Work	2004	2004	Contract 2003-3 - Electrical Construction	70,500.00	0	70,500.00	HWW-115	420.8	717	1.704	120,132	1.000	120,132
354	354	Bond	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	Inspection	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	Temp. Power Construction	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	Mobilization	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
354	354	General Conditions	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	Excavation and Backfill	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	28,000.00	0	28,000.00	HWW-115	316	717	2.269	63,532	1.000	63,532
354	354	A	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	B	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,400.00	0	1,400.00	HWW-115	316	717	2.269	3,177	1.000	3,177
354	354	C	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	3,300.00	0	3,300.00	HWW-115	316	717	2.269	7,488	1.000	7,488
354	354	D	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	E	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	3,000.00	0	3,000.00	HWW-115	316	717	2.269	6,807	1.000	6,807
354	354	F	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	4,600.00	0	4,600.00	HWW-115	316	717	2.269	10,437	1.000	10,437
354	354	H	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	9,000.00	0	9,000.00	HWW-115	316	717	2.269	20,421	1.000	20,421
354	354	J	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,538	1.000	4,538
354	354	V	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,300.00	0	1,300.00	HWW-115	316	717	2.269	2,950	1.000	2,950
354	354	W	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	800.00	0	800.00	HWW-115	316	717	2.269	1,815	1.000	1,815
354	354	X	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,700.00	0	1,700.00	HWW-115	316	717	2.269	3,857	1.000	3,857
354	354	Y	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	Z	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	600.00	0	600.00	HWW-115	316	717	2.269	1,361	1.000	1,361
354	354	100 AMP Main Breaker	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	1200 AMP MCC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	15,000.00	0	15,000.00	HWW-115	316	717	2.269	34,035	1.000	34,035
354	354	30 KVA Trans, 1 phase	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	30 KVA Trans, 3 phase	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	15 KVA Trans, 3 phase	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,400.00	0	2,400.00	HWW-115	316	717	2.269	5,446	1.000	5,446
354	354	45 KVA Trans, 3 phase	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,700.00	0	1,700.00	HWW-115	316	717	2.269	3,857	1.000	3,857
354	354	Panel LP4	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP4A	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP5	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP3	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP2	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								DC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Panel LP6	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Manhole	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	6,000.00	0	6,000.00	HWW-115	316	717	2.269	13,614	1.000	13,614
354	354	Light Pole Bases	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	10,500.00	0	10,500.00	HWW-115	316	717	2.269	23,825	1.000	23,825
354	354	Fire Alarm Control Panel	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Fire Alarm Auto Disks	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	Fire Alarm Pull Stations	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,100.00	0	1,100.00	HWW-115	316	717	2.269	2,496	1.000	2,496
354	354	Fire Alarm Horns	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	700.00	0	700.00	HWW-115	316	717	2.269	1,588	1.000	1,588
354	354	Fire Alarm Heat Det	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,900.00	0	1,900.00	HWW-115	316	717	2.269	4,311	1.000	4,311
354	354	500Kw Generator	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	55,000.00	0	55,000.00	HWW-115	316	717	2.269	124,795	1.000	124,795
354	354	Fuel Tank	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	22,000.00	0	22,000.00	HWW-115	316	717	2.269	49,918	1.000	49,918
354	354	Auto Transfer SW	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	1" PVC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	3,000.00	0	3,000.00	HWW-115	316	717	2.269	6,807	1.000	6,807
354	354	1 1/2" PVC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	2" PVC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	13,000.00	0	13,000.00	HWW-115	316	717	2.269	29,497	1.000	29,497
354	354	4" PVC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	5,600.00	0	5,600.00	HWW-115	316	717	2.269	12,706	1.000	12,706
354	354	3/4" GRC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	17,500.00	0	17,500.00	HWW-115	316	717	2.269	39,708	1.000	39,708
354	354	1" GRC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,200.00	0	2,200.00	HWW-115	316	717	2.269	4,992	1.000	4,992
354	354	1 1/4" GRC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	1 1/2" GRC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	425.00	0	425.00	HWW-115	316	717	2.269	964	1.000	964
354	354	2" GRC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,700.00	0	1,700.00	HWW-115	316	717	2.269	3,857	1.000	3,857
354	354	4" GRC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	3/4" GRC PVC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	6,000.00	0	6,000.00	HWW-115	316	717	2.269	13,614	1.000	13,614
354	354	1" GRC PVC	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,750.00	0	2,750.00	HWW-115	316	717	2.269	6,240	1.000	6,240
354	354	12 THHN	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	4,000.00	0	4,000.00	HWW-115	316	717	2.269	9,076	1.000	9,076
354	354	10 THHN	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,200.00	0	2,200.00	HWW-115	316	717	2.269	4,992	1.000	4,992
354	354	8 THHN	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,200.00	0	2,200.00	HWW-115	316	717	2.269	4,992	1.000	4,992
354	354	6 THHN	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	3 THHN	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	3/0 THHN	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	500 MCM	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	8,500.00	0	8,500.00	HWW-115	316	717	2.269	19,287	1.000	19,287
354	354	20 A Switches	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	950.00	0	950.00	HWW-115	316	717	2.269	2,156	1.000	2,156

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(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	Last Normal Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study Yr	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	20 A Rec	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,950.00	0	1,950.00	HWW-115	316	717	2.269	4,425	1.000	4,425
354	354	System Cable	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	48,000.00	0	48,000.00	HWW-115	316	717	2.269	108,912	1.000	108,912
354	354	Spare fuse Cabinet and Fuses	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	Coordination Drawing	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	Project Demo	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	30 AMP Disc	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	7,000.00	0	7,000.00	HWW-115	316	717	2.269	15,883	1.000	15,883
354	354	Fractional HP Starters	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	700.00	0	700.00	HWW-115	316	717	2.269	1,588	1.000	1,588
354	354	Motor Connections	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	10,468.00	0	10,468.00	HWW-115	316	717	2.269	23,752	1.000	23,752
354	354	20 KVAR capacitors	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
354	354	Fuel piping	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	C.O. 1 - 1% Bid Reduction	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	(4,868.40)	0	(4,868.40)	HWW-115	316	717	2.269	(11,046)	1.000	(11,046)
354	354	C.O. 2 - Red. For Underground Service	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	(500.00)	0	(500.00)	HWW-115	316	717	2.269	(1,135)	1.000	(1,135)
354	354	C.O. 3 - Various Adds	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	4,770.75	0	4,770.75	HWW-115	316	717	2.269	10,825	1.000	10,825
354	354	C.O. 4 - Various Adds	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	3,851.75	0	3,851.75	HWW-115	316	717	2.269	8,740	1.000	8,740
354	354	C.O. 5 - Various Adds	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	1,710.40	0	1,710.40	HWW-115	316	717	2.269	3,881	1.000	3,881
354	354	C.O. 6 - Various Adds	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	301.00	0	301.00	HWW-115	316	717	2.269	683	1.000	683
354	354	C.O. 7 - Various Adds	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	858.75	0	858.75	HWW-115	316	717	2.269	1,949	1.000	1,949
354	354	C.O. 8 - Delayed Costs	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	6,000.00	0	6,000.00	HWW-115	316	717	2.269	13,614	1.000	13,614
354	354	Contract Bond	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	2,684.00	0	2,684.00	HWW-115	316	717	2.269	6,090	1.000	6,090
354	354	Office Mobilization	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	2,596.00	0	2,596.00	HWW-115	316	717	2.269	5,890	1.000	5,890
354	354	Field Mobilization	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,294.00	0	1,294.00	HWW-115	316	717	2.269	2,936	1.000	2,936
354	354	1/2 - 2" Blk. Stl. Pipe	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	17,940.00	0	17,940.00	HWW-115	316	717	2.269	40,706	1.000	40,706
354	354	3/4 Copper Tubing	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	700.00	0	700.00	HWW-115	316	717	2.269	1,588	1.000	1,588
354	354	2-3" PVC Intake	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,350.00	0	1,350.00	HWW-115	316	717	2.269	3,063	1.000	3,063
354	354	2-3" CPVC Intake	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,890.00	0	1,890.00	HWW-115	316	717	2.269	4,288	1.000	4,288
354	354	Automatic Air Vents	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	380.00	0	380.00	HWW-115	316	717	2.269	862	1.000	862
354	354	Pumps	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	425.00	0	425.00	HWW-115	316	717	2.269	964	1.000	964
354	354	Air Separators	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	148.00	0	148.00	HWW-115	316	717	2.269	336	1.000	336
354	354	Expansion Tank	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,140.00	0	1,140.00	HWW-115	316	717	2.269	2,587	1.000	2,587
354	354	Boilers	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	19,304.00	0	19,304.00	HWW-115	316	717	2.269	43,801	1.000	43,801
354	354	Finned Tube Radiation	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	9,620.00	0	9,620.00	HWW-115	316	717	2.269	21,828	1.000	21,828

Pennsylvania American Water Company
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								DC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	Last Nominal Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Gas Fired Units	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	3,216.00	0	3,216.00	HWW-115	316	717	2.269	7,297	1.000	7,297
354	354	Propane Heater	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	542.00	0	542.00	HWW-115	316	717	2.269	1,230	1.000	1,230
354	354	Thru-the-Wall A/C	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	4,124.00	0	4,124.00	HWW-115	316	717	2.269	9,357	1.000	9,357
354	354	Misc. Demolition	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,983.00	0	1,983.00	HWW-115	316	717	2.269	4,499	1.000	4,499
354	354	Concrete Pads	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	352.00	0	352.00	HWW-115	316	717	2.269	799	1.000	799
354	354	Painting	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	500.00	0	500.00	HWW-115	316	717	2.269	1,135	1.000	1,135
354	354	Misc. Cut and Patch	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	2,552.00	0	2,552.00	HWW-115	316	717	2.269	5,790	1.000	5,790
354	354	Insulation	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,400.00	0	1,400.00	HWW-115	316	717	2.269	3,177	1.000	3,177
354	354	ATC	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	18,320.00	0	18,320.00	HWW-115	316	717	2.269	41,568	1.000	41,568
354	354	GRD's	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	600.00	0	600.00	HWW-115	316	717	2.269	1,361	1.000	1,361
354	354	Fans	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	10,208.00	0	10,208.00	HWW-115	316	717	2.269	23,162	1.000	23,162
354	354	Roof Hoods	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	5,136.00	0	5,136.00	HWW-115	316	717	2.269	11,654	1.000	11,654
354	354	Roof Curbs	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,680.00	0	1,680.00	HWW-115	316	717	2.269	3,812	1.000	3,812
354	354	Electric Heat	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	2,512.00	0	2,512.00	HWW-115	316	717	2.269	5,700	1.000	5,700
354	354	Louvers	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	2,552.00	0	2,552.00	HWW-115	316	717	2.269	5,790	1.000	5,790
354	354	Starters and Disconnect	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,888.00	0	1,888.00	HWW-115	316	717	2.269	4,284	1.000	4,284
354	354	Balance	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	600.00	0	600.00	HWW-115	316	717	2.269	1,361	1.000	1,361
354	354	Roofing	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	549.00	0	549.00	HWW-115	316	717	2.269	1,246	1.000	1,246
354	354	Flue Pipe	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	950.00	0	950.00	HWW-115	316	717	2.269	2,156	1.000	2,156
354	354	Motor Operated Damper and Bbd	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	495.00	0	495.00	HWW-115	316	717	2.269	1,123	1.000	1,123
354	354	Fin Tube	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	4,680.00	0	4,680.00	HWW-115	316	717	2.269	10,619	1.000	10,619
354	354	Galv. Duct Fab	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	2,125.00	0	2,125.00	HWW-115	316	717	2.269	4,822	1.000	4,822
354	354	Galv. Duct Install	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	1,700.00	0	1,700.00	HWW-115	316	717	2.269	3,857	1.000	3,857
354	354	Galv. Fitting Fab	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	740.00	0	740.00	HWW-115	316	717	2.269	1,679	1.000	1,679
354	354	Galv. Fitting Duct	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	925.00	0	925.00	HWW-115	316	717	2.269	2,099	1.000	2,099
354	354	Change Order #1	1995-96	1995	Contract 3-92 - Pine Street Wastewater Treatment Plant (HVAC)	550.00	0	550.00	HWW-115	316	717	2.269	1,248	1.000	1,248
354	354	Bonds & Insurances	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	54,300.00	0	54,300.00	HWW-115	316	717	2.269	123,207	1.000	123,207
354	354	Mobilization/Demobilization	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	12,800.00	0	12,800.00	HWW-115	316	717	2.269	29,043	1.000	29,043
354	354	Temporary Facilities	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	30,000.00	0	30,000.00	HWW-115	316	717	2.269	68,070	1.000	68,070
354	354	Supervision	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	66,000.00	0	66,000.00	HWW-115	316	717	2.269	149,754	1.000	149,754
354	354	Testing Services	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	16,500.00	0	16,500.00	HWW-115	316	717	2.269	37,439	1.000	37,439

Pennsylvania American Water Company
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Start-up	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	6,000.00	0	6,000.00	HWW-115	316	717	2.269	13,614	1.000	13,614
354	354	Clear & Grub (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	Erosion Control (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,000.00	0	3,000.00	HWW-115	316	717	2.269	6,807	1.000	6,807
354	354	Site Grading (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,000.00	0	3,000.00	HWW-115	316	717	2.269	6,807	1.000	6,807
354	354	Fine Grading & Seeding (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
354	354	Concrete Sidewalks (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	Temporary Roadways (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	Asphalt Roadways (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	30,000.00	0	30,000.00	HWW-115	316	717	2.269	68,070	1.000	68,070
354	354	Gravel Roadways (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Chain link Fencing (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
354	354	Storm Piping (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	16,000.00	0	16,000.00	HWW-115	316	717	2.269	36,304	1.000	36,304
354	354	Yard Piping & Precast Vaults Mat. (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	320,000.00	0	320,000.00	HWW-115	316	717	2.269	726,080	1.000	726,080
354	354	Yard Piping & Precast Vaults Ins. (Site Work)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	165,000.00	0	165,000.00	HWW-115	316	717	2.269	374,385	1.000	374,385
354	354	Excavation and Dewatering (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,538	1.000	4,538
354	354	Backfill (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Concrete Footers & Base Slabs (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	25,000.00	0	25,000.00	HWW-115	316	717	2.269	56,725	1.000	56,725
354	354	Concrete Walls (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	35,000.00	0	35,000.00	HWW-115	316	717	2.269	79,415	1.000	79,415
354	354	Concrete Suspended Slabs (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,500.00	0	3,500.00	HWW-115	316	717	2.269	7,942	1.000	7,942
354	354	Concrete Slabs on Grade (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	Precast Concrete Planks (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,000.00	0	4,000.00	HWW-115	316	717	2.269	9,076	1.000	9,076
354	354	Masonry Building Construction (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	38,000.00	0	38,000.00	HWW-115	316	717	2.269	86,222	1.000	86,222
354	354	Miscellaneous Metals (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	30,800.00	0	30,800.00	HWW-115	316	717	2.269	69,885	1.000	69,885
354	354	Roof Structure (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	52,000.00	0	52,000.00	HWW-115	316	717	2.269	117,988	1.000	117,988
354	354	Doors& Windows (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	19,000.00	0	19,000.00	HWW-115	316	717	2.269	43,111	1.000	43,111
354	354	Durock Ceilings (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	17,000.00	0	17,000.00	HWW-115	316	717	2.269	38,573	1.000	38,573
354	354	Painting & Coatings (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	33,000.00	0	33,000.00	HWW-115	316	717	2.269	74,877	1.000	74,877
354	354	Fiberglass Gratings (Preliminary Treatment Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	22,000.00	0	22,000.00	HWW-115	316	717	2.269	49,918	1.000	49,918
354	354	Excavation and Dewatering (Sequential Batch Reactor)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	53,000.00	0	53,000.00	HWW-115	316	717	2.269	120,257	1.000	120,257
354	354	Backfill (Sequential Batch Reactor)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	0	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
354	354	Concrete Base Slabs (Sequential Batch Reactor)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	286,000.00	0	286,000.00	HWW-115	316	717	2.269	648,934	1.000	648,934
354	354	Concrete Walls (Sequential Batch Reactor)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	390,000.00	0	390,000.00	HWW-115	316	717	2.269	884,910	1.000	884,910

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
		East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Copy(10) & (5)	Cost Indices Lookup Copy(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	354	354 Concrete Suspended Slabs (Sequential Batch Reactor)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
	354	354 Miscellaneous Metals (Sequential Batch Reactor)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	27,500.00	27,500.00	HWW-115	316	717	2.269	62,398	1.000	62,398
	354	354 Painting & Coatings (Sequential Batch Reactor)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	7,500.00	7,500.00	HWW-115	316	717	2.269	17,018	1.000	17,018
	354	354 Demolition Work (Chlorine Contact Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
	354	354 Concrete Slabs & Fillet (Chlorine Contact Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
	354	354 Concrete Walls (Chlorine Contact Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	51,000.00	51,000.00	HWW-115	316	717	2.269	115,719	1.000	115,719
	354	354 Miscellaneous Metals (Chlorine Contact Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,500.00	5,500.00	HWW-115	316	717	2.269	12,480	1.000	12,480
	354	354 Painting & Coatings (Chlorine Contact Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,300.00	4,300.00	HWW-115	316	717	2.269	9,757	1.000	9,757
	354	354 Demolition Work (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	15,000.00	15,000.00	HWW-115	316	717	2.269	34,035	1.000	34,035
	354	354 Concrete Suspended Slabs (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,100.00	3,100.00	HWW-115	316	717	2.269	7,034	1.000	7,034
	354	354 Concrete Fillet (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	1,700.00	1,700.00	HWW-115	316	717	2.269	3,857	1.000	3,857
	354	354 Masonry Building Construction (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,100.00	3,100.00	HWW-115	316	717	2.269	7,034	1.000	7,034
	354	354 Miscellaneous Metals (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,500.00	5,500.00	HWW-115	316	717	2.269	12,480	1.000	12,480
	354	354 Roof Structure (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	9,000.00	9,000.00	HWW-115	316	717	2.269	20,421	1.000	20,421
	354	354 Door & Hatches (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,500.00	3,500.00	HWW-115	316	717	2.269	7,942	1.000	7,942
	354	354 Durock Ceilings (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,000.00	2,000.00	HWW-115	316	717	2.269	4,538	1.000	4,538
	354	354 Painting & Coatings (Effluent Water Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,300.00	4,300.00	HWW-115	316	717	2.269	9,757	1.000	9,757
	354	354 Shoring (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	125,000.00	125,000.00	HWW-115	316	717	2.269	283,625	1.000	283,625
	354	354 Excavation and Dewatering (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
	354	354 Backfill (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	10,000.00	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
	354	354 Concrete Base Slabs (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	12,000.00	12,000.00	HWW-115	316	717	2.269	27,228	1.000	27,228
	354	354 Concrete Walls (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	56,000.00	56,000.00	HWW-115	316	717	2.269	127,064	1.000	127,064
	354	354 Concrete Suspended Slabs (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
	354	354 Masonry Building Construction (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,400.00	2,400.00	HWW-115	316	717	2.269	5,446	1.000	5,446
	354	354 Miscellaneous Metals (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	11,000.00	11,000.00	HWW-115	316	717	2.269	24,959	1.000	24,959
	354	354 Roof Structure (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	6,000.00	6,000.00	HWW-115	316	717	2.269	13,614	1.000	13,614
	354	354 Fluid Applied Roofing (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	700.00	700.00	HWW-115	316	717	2.269	1,588	1.000	1,588
	354	354 Doors & Hatches (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,000.00	4,000.00	HWW-115	316	717	2.269	9,076	1.000	9,076
	354	354 Durock Ceilings (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	800.00	800.00	HWW-115	316	717	2.269	1,815	1.000	1,815
	354	354 Painting & Coatings (W.A.S. Pump Structure)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	6,500.00	6,500.00	HWW-115	316	717	2.269	14,749	1.000	14,749
	354	354 Excavation (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,500.00	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	Yearindex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Backfill (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,538	1.000	4,538
354	354	Concrete Footings (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
354	354	Concrete Equipment Bases (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	10,200.00	0	10,200.00	HWW-115	316	717	2.269	23,144	1.000	23,144
354	354	Concrete Slabs on Grade (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	9,100.00	0	9,100.00	HWW-115	316	717	2.269	20,648	1.000	20,648
354	354	Concrete Suspended Slabs (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	600.00	0	600.00	HWW-115	316	717	2.269	1,361	1.000	1,361
354	354	Masonry Building Construction (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	40,000.00	0	40,000.00	HWW-115	316	717	2.269	90,760	1.000	90,760
354	354	Miscellaneous Metals (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	16,500.00	0	16,500.00	HWW-115	316	717	2.269	37,439	1.000	37,439
354	354	Roof Structure (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	68,300.00	0	68,300.00	HWW-115	316	717	2.269	154,973	1.000	154,973
354	354	Doors& Windows (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	24,400.00	0	24,400.00	HWW-115	316	717	2.269	55,364	1.000	55,364
354	354	Durock Ceilings (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	26,400.00	0	26,400.00	HWW-115	316	717	2.269	59,902	1.000	59,902
354	354	Painting & Coatings (Belt Filter Press & Blower Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	37,500.00	0	37,500.00	HWW-115	316	717	2.269	85,088	1.000	85,088
354	354	Demolition Work (W.A.S. Holding Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	Concrete Floor Fill (W.A.S. Holding Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	6,700.00	0	6,700.00	HWW-115	316	717	2.269	15,202	1.000	15,202
354	354	Roof Repair (W.A.S. Holding Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,536	1.000	4,536
354	354	Painting & Coatings (W.A.S. Holding Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,300.00	0	4,300.00	HWW-115	316	717	2.269	9,757	1.000	9,757
354	354	Excavation and Dewatering (Aerobics Digesters)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	Backfill (Aerobics Digesters)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	7,500.00	0	7,500.00	HWW-115	316	717	2.269	17,018	1.000	17,018
354	354	Concrete Base Slabs (Aerobics Digesters)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	76,000.00	0	76,000.00	HWW-115	316	717	2.269	172,444	1.000	172,444
354	354	Concrete Walls (Aerobics Digesters)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	133,000.00	0	133,000.00	HWW-115	316	717	2.269	301,777	1.000	301,777
354	354	Concrete Suspended Slabs (Aerobics Digesters)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,000.00	0	4,000.00	HWW-115	316	717	2.269	9,076	1.000	9,076
354	354	Miscellaneous Metals (Aerobics Digesters)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	13,200.00	0	13,200.00	HWW-115	316	717	2.269	29,951	1.000	29,951
354	354	Painting & Coatings (Aerobics Digesters)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,500.00	0	5,500.00	HWW-115	316	717	2.269	12,480	1.000	12,480
354	354	Demolition Work (Existing Control Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	0	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
354	354	Demolition Work (Existing Sprinkling Filter)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	50,000.00	0	50,000.00	HWW-115	316	717	2.269	113,450	1.000	113,450
354	354	Excavation and Dewatering (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,500.00	0	3,500.00	HWW-115	316	717	2.269	7,942	1.000	7,942
354	354	Backfill (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,536	1.000	4,536
354	354	Concrete Footers & Base Slabs (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,200.00	0	5,200.00	HWW-115	316	717	2.269	11,799	1.000	11,799
354	354	Concrete Walls (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	7,000.00	0	7,000.00	HWW-115	316	717	2.269	15,883	1.000	15,883
354	354	Concrete Suspended Slabs (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,200.00	0	4,200.00	HWW-115	316	717	2.269	9,530	1.000	9,530
354	354	Concrete Slabs on Grade (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	1,100.00	0	1,100.00	HWW-115	316	717	2.269	2,496	1.000	2,496
354	354	Masonry Building Construction (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,500.00	0	4,500.00	HWW-115	316	717	2.269	10,211	1.000	10,211

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(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	Last Nonfion Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	Yearindex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	354	354 Roof Structure (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	14,000.00	0	14,000.00	HWW-115	316	717	2.269	31,766	1.000	31,766
	354	354 Doors, Windows & Hatches (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	7,200.00	0	7,200.00	HWW-115	316	717	2.269	16,337	1.000	16,337
	354	354 Durock Ceilings (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,000.00	0	3,000.00	HWW-115	316	717	2.269	6,807	1.000	6,807
	354	354 Painting & Coatings (Septage Acceptance Facility)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,400.00	0	5,400.00	HWW-115	316	717	2.269	12,253	1.000	12,253
	354	354 Demolition Work (Existing Grit Building)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	30,000.00	0	30,000.00	HWW-115	316	717	2.269	68,070	1.000	68,070
	354	354 Plumbing Work - Mat	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	20,000.00	0	20,000.00	HWW-115	316	717	2.269	45,380	1.000	45,380
	354	354 Plumbing Work - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	15,000.00	0	15,000.00	HWW-115	316	717	2.269	34,035	1.000	34,035
	354	354 Change Order 1 (Deduct)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	(9,000.00)	0	(9,000.00)	HWW-115	316	717	2.269	(20,421)	1.000	(20,421)
	354	354 Change Order 2 (N.C.)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	-	0	-	HWW-115	316	717	2.269	-	1.000	-
	354	354 Change Order 3 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	975.20	0	975.20	HWW-115	316	717	2.269	2,213	1.000	2,213
	354	354 Change Order 4 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	8,897.14	0	8,897.14	HWW-115	316	717	2.269	20,188	1.000	20,188
	354	354 Change Order 5 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	18,260.00	0	18,260.00	HWW-115	316	717	2.269	41,432	1.000	41,432
	354	354 Change Order 6 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,885.00	0	4,885.00	HWW-115	316	717	2.269	11,084	1.000	11,084
	354	354 Change Order 7 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	30,027.00	0	30,027.00	HWW-115	316	717	2.269	68,131	1.000	68,131
	354	354 Change Order 8 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	988.89	0	988.89	HWW-115	316	717	2.269	2,244	1.000	2,244
	354	354 Change Order 9 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,235.00	0	3,235.00	HWW-115	316	717	2.269	7,340	1.000	7,340
	354	354 Change Order 10 (N.C.)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	-	0	-	HWW-115	316	717	2.269	-	1.000	-
	354	354 Change Order 11 (Add)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,981.00	0	2,981.00	HWW-115	316	717	2.269	6,764	1.000	6,764
	354	354 Bond	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
	354	354 Inspection	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
	354	354 Temp. Power Construction	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
	354	354 Mobilization	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
	354	354 General Conditions	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
	354	354 Excavation and Backfill	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	28,000.00	0	28,000.00	HWW-115	316	717	2.269	63,532	1.000	63,532
	354	354 A	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,538	1.000	4,538
	354	354 B	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	2,200.00	0	2,200.00	HWW-115	316	717	2.269	4,992	1.000	4,992
	354	354 C	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	3,000.00	0	3,000.00	HWW-115	316	717	2.269	6,807	1.000	6,807
	354	354 D	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	600.00	0	600.00	HWW-115	316	717	2.269	1,361	1.000	1,361
	354	354 E	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	2,300.00	0	2,300.00	HWW-115	316	717	2.269	5,219	1.000	5,219
	354	354 F	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	5,200.00	0	5,200.00	HWW-115	316	717	2.269	11,799	1.000	11,799
	354	354 G	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant	(Electrical)	200.00	0	200.00	HWW-115	316	717	2.269	454	1.000	454

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Account	Account	Asset Description	Average Year Installed	Average Year Installed			Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
							DC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input			Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection Systems Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input			Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed			Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	V	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	W	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	800.00	0	800.00	HWW-115	316	717	2.269	1,815	1.000	1,815
354	354	X	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	600.00	0	600.00	HWW-115	316	717	2.269	1,361	1.000	1,361
354	354	Y	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	800.00	0	800.00	HWW-115	316	717	2.269	1,815	1.000	1,815
354	354	Z	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	400.00	0	400.00	HWW-115	316	717	2.269	908	1.000	908
354	354	H	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	10,800.00	0	10,800.00	HWW-115	316	717	2.269	24,505	1.000	24,505
354	354	100 AMP Main Breaker	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	10,000.00	0	10,000.00	HWW-115	316	717	2.269	22,690	1.000	22,690
354	354	1200 AMP MCC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	15,000.00	0	15,000.00	HWW-115	316	717	2.269	34,035	1.000	34,035
354	354	30 KVA Trans, 1 phase	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	30 KVA Trans, 3 phase	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,800.00	0	2,800.00	HWW-115	316	717	2.269	6,353	1.000	6,353
354	354	40 KVA Trans, 3 phase	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,700.00	0	1,700.00	HWW-115	316	717	2.269	3,857	1.000	3,857
354	354	15 KVA Trans, 3 phase	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,200.00	0	1,200.00	HWW-115	316	717	2.269	2,723	1.000	2,723
354	354	Panel LP4	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP4A	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP6	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP1	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP3	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP2	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Panel LP5	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Manhole	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	6,000.00	0	6,000.00	HWW-115	316	717	2.269	13,614	1.000	13,614
354	354	Light Pole Bases	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	12,000.00	0	12,000.00	HWW-115	316	717	2.269	27,228	1.000	27,228
354	354	Fire Alarm Control Panel	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-115	316	717	2.269	5,673	1.000	5,673
354	354	Auto Dialer Fire Alarm	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	Fire Pull Stations	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,100.00	0	1,100.00	HWW-115	316	717	2.269	2,496	1.000	2,496
354	354	Fire Horns	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	700.00	0	700.00	HWW-115	316	717	2.269	1,588	1.000	1,588
354	354	Fire Heat Detector	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,100.00	0	2,100.00	HWW-115	316	717	2.269	4,765	1.000	4,765
354	354	500 KW Generator	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	55,000.00	0	55,000.00	HWW-115	316	717	2.269	124,795	1.000	124,795
354	354	Fuel Tank	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	22,000.00	0	22,000.00	HWW-115	316	717	2.269	49,918	1.000	49,918
354	354	Auto Transfer Switch	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	1" PVC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	4,000.00	0	4,000.00	HWW-115	316	717	2.269	9,076	1.000	9,076
354	354	1 1/2" PVC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	2" PVC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	15,000.00	0	15,000.00	HWW-115	316	717	2.269	34,035	1.000	34,035
354	354	4" PVC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	7,000.00	0	7,000.00	HWW-115	316	717	2.269	15,883	1.000	15,883
354	354	3/4" GRC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	17,500.00	0	17,500.00	HWW-115	316	717	2.269	39,708	1.000	39,708
354	354	1" GRC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	3,750.00	0	3,750.00	HWW-115	316	717	2.269	8,509	1.000	8,509
354	354	1 1/4" GRC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,538	1.000	4,538
354	354	1 1/2" GRC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	425.00	0	425.00	HWW-115	316	717	2.269	964	1.000	964
354	354	2" GRC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	9,000.00	0	9,000.00	HWW-115	316	717	2.269	20,421	1.000	20,421
354	354	4" GRC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,600.00	0	1,600.00	HWW-115	316	717	2.269	3,630	1.000	3,630
354	354	3/4" GRC PVC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	7,500.00	0	7,500.00	HWW-115	316	717	2.269	17,018	1.000	17,018
354	354	1" GRC PVC	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,750.00	0	2,750.00	HWW-115	316	717	2.269	6,240	1.000	6,240
354	354	12 Wire	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	6,000.00	0	6,000.00	HWW-115	316	717	2.269	13,614	1.000	13,614
354	354	10 Wire	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	3,750.00	0	3,750.00	HWW-115	316	717	2.269	8,509	1.000	8,509
354	354	8 Wire	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,800.00	0	2,800.00	HWW-115	316	717	2.269	6,353	1.000	6,353
354	354	6 Wire	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,350.00	0	1,350.00	HWW-115	316	717	2.269	3,063	1.000	3,063
354	354	3 Wire	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,000.00	0	2,000.00	HWW-115	316	717	2.269	4,538	1.000	4,538
354	354	3/0 Wire	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	12,000.00	0	12,000.00	HWW-115	316	717	2.269	27,228	1.000	27,228
354	354	500 MCM	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	10,409.00	0	10,409.00	HWW-115	316	717	2.269	23,618	1.000	23,618
354	354	20 A Switches	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	870.00	0	870.00	HWW-115	316	717	2.269	1,974	1.000	1,974
354	354	20 A Rec	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,530.00	0	1,530.00	HWW-115	316	717	2.269	3,472	1.000	3,472
354	354	System Cable	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	54,000.00	0	54,000.00	HWW-115	316	717	2.269	122,526	1.000	122,526
354	354	Spare fuse Cabinet and Fuses	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	Coordination Drawing	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	5,000.00	0	5,000.00	HWW-115	316	717	2.269	11,345	1.000	11,345
354	354	Project Demo	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
354	354	30 AMP Disc	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	9,800.00	0	9,800.00	HWW-115	316	717	2.269	22,236	1.000	22,236
354	354	Fractional HP Starters	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,500.00	0	1,500.00	HWW-115	316	717	2.269	3,404	1.000	3,404
354	354	Motor Connections	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	12,600.00	0	12,600.00	HWW-115	316	717	2.269	28,589	1.000	28,589
354	354	20 KVAR capacitors	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	8,000.00	0	8,000.00	HWW-115	316	717	2.269	18,152	1.000	18,152
354	354	Fuel piping	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,000.00	0	1,000.00	HWW-115	316	717	2.269	2,269	1.000	2,269
354	354	C.O. 1 - 1% Bid Reduction	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	(5,236.35)	0	(5,236.35)	HWW-115	316	717	2.269	(11,881)	1.000	(11,881)
354	354	C.O. 2 - Red. For Underground Service	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,911.25	0	1,911.25	HWW-115	316	717	2.269	4,337	1.000	4,337
354	354	C.O. 3 - Various Adds	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	3,941.75	0	3,941.75	HWW-115	316	717	2.269	8,944	1.000	8,944

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								DC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	354	354 C.O. 4 - Solenoid Valve, XFR	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,111.25	0	1,111.25	HWW-115	316	717	2.269	2,521	1.000	2,521
	354	354 C.O. 5 - Various Adds	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,050.00	0	1,050.00	HWW-115	316	717	2.269	2,382	1.000	2,382
	354	354 C.O. 6 - Various Adds	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	301.00	0	301.00	HWW-115	316	717	2.269	683	1.000	683
	354	354 C.O. 7 - Various Adds	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	1,097.00	0	1,097.00	HWW-115	316	717	2.269	2,489	1.000	2,489
	354	354 C.O. 7 - Delayed Cost	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	9,000.00	0	9,000.00	HWW-115	316	717	2.269	20,421	1.000	20,421
	354	354 Contract Bond	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	2,887.00	0	2,887.00	HWW-115	316	717	2.269	6,551	1.000	6,551
	354	354 Office Mobilization	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	2,792.00	0	2,792.00	HWW-115	316	717	2.269	6,335	1.000	6,335
	354	354 Field Mobilization	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,388.00	0	1,388.00	HWW-115	316	717	2.269	3,149	1.000	3,149
	354	354 1/2 - 2" Blk. Stl. Pipe	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	18,720.00	0	18,720.00	HWW-115	316	717	2.269	42,476	1.000	42,476
	354	354 3/4 Copper Tubing	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	700.00	0	700.00	HWW-115	316	717	2.269	1,588	1.000	1,588
	354	354 2-3" PVC Intake	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,350.00	0	1,350.00	HWW-115	316	717	2.269	3,063	1.000	3,063
	354	354 2-3" CPVC Intake	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,890.00	0	1,890.00	HWW-115	316	717	2.269	4,288	1.000	4,288
	354	354 Automatic Air Vents	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	380.00	0	380.00	HWW-115	316	717	2.269	862	1.000	862
	354	354 Pumps	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	425.00	0	425.00	HWW-115	316	717	2.269	964	1.000	964
	354	354 Air Separators	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	148.00	0	148.00	HWW-115	316	717	2.269	336	1.000	336
	354	354 Expansion Tank	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,140.00	0	1,140.00	HWW-115	316	717	2.269	2,587	1.000	2,587
	354	354 Boilers	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	19,304.00	0	19,304.00	HWW-115	316	717	2.269	43,801	1.000	43,801
	354	354 Finned Tube Radiator	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	9,620.00	0	9,620.00	HWW-115	316	717	2.269	21,828	1.000	21,828
	354	354 Gas Fired Units	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	4,788.00	0	4,788.00	HWW-115	316	717	2.269	10,864	1.000	10,864
	354	354 Propane Heater	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	542.00	0	542.00	HWW-115	316	717	2.269	1,230	1.000	1,230
	354	354 Thru-the-Wall A/C	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	3,030.00	0	3,030.00	HWW-115	316	717	2.269	6,875	1.000	6,875
	354	354 Misc. Demolition	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,637.00	0	1,637.00	HWW-115	316	717	2.269	3,714	1.000	3,714
	354	354 Concrete Pads	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	352.00	0	352.00	HWW-115	316	717	2.269	799	1.000	799
	354	354 Painting	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	500.00	0	500.00	HWW-115	316	717	2.269	1,135	1.000	1,135
	354	354 Misc. Cut and Patch	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,914.00	0	1,914.00	HWW-115	316	717	2.269	4,343	1.000	4,343
	354	354 Insulation	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,400.00	0	1,400.00	HWW-115	316	717	2.269	3,177	1.000	3,177
	354	354 ATC	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	18,364.00	0	18,364.00	HWW-115	316	717	2.269	41,668	1.000	41,668
	354	354 GRD's	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,400.00	0	1,400.00	HWW-115	316	717	2.269	3,177	1.000	3,177
	354	354 Fans	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	11,502.00	0	11,502.00	HWW-115	316	717	2.269	26,098	1.000	26,098
	354	354 Roof Hoods	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	6,848.00	0	6,848.00	HWW-115	316	717	2.269	15,538	1.000	15,538
	354	354 Roof Curbs	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	2,352.00	0	2,352.00	HWW-115	316	717	2.269	5,337	1.000	5,337

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(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	Aus Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Asmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cost(10) & (5)	Cost Indices Lookup Cost(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354	354	Electric Heat	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	5,628.00	0	5,628.00	HWW-115	316	717	2.269	12,770	1.000	12,770
354	354	Louvers	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	2,552.00	0	2,552.00	HWW-115	316	717	2.269	5,790	1.000	5,790
354	354	Starters and Disconnect	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	2,343.00	0	2,343.00	HWW-115	316	717	2.269	5,316	1.000	5,316
354	354	Balance	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	650.00	0	650.00	HWW-115	316	717	2.269	1,475	1.000	1,475
354	354	Roofing	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	205.00	0	205.00	HWW-115	316	717	2.269	465	1.000	465
354	354	Flue Pipe	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	1,140.00	0	1,140.00	HWW-115	316	717	2.269	2,587	1.000	2,587
354	354	Motor Operated Damper and Bbd	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	585.00	0	585.00	HWW-115	316	717	2.269	1,327	1.000	1,327
354	354	Fin Tube	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	4,464.00	0	4,464.00	HWW-115	316	717	2.269	10,129	1.000	10,129
354	354	Galv. Duct Fab	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	2,750.00	0	2,750.00	HWW-115	316	717	2.269	6,240	1.000	6,240
354	354	Galv. Duct Install	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	2,200.00	0	2,200.00	HWW-115	316	717	2.269	4,992	1.000	4,992
354	354	Galv. Fitting Fab	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	760.00	0	760.00	HWW-115	316	717	2.269	1,724	1.000	1,724
354	354	Galv. Fitting Install	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	950.00	0	950.00	HWW-115	316	717	2.269	2,156	1.000	2,156
354	354	Change Order #1	1995-96	1995	Contract 6-92 - Kinzua Wastewater Treatment Plant (HVAC)	550.00	0	550.00	HWW-115	316	717	2.269	1,248	1.000	1,248
354	354	Select Backfill	2006	2006	Contract No. 2006-1	1,250.00	0	1,250.00	HWW-115	466.3	717	1.538	1,923	1.000	1,923
354	354	Straw Bale Barrier/Filter Fence	2006	2006	Contract No. 2006-1	9,730.00	0	9,730.00	HWW-115	466.3	717	1.538	14,965	1.000	14,965
354	354	Exploratory Excavation	2006	2006	Contract No. 2006-1	255.00	0	255.00	HWW-115	466.3	717	1.538	392	1.000	392
354	354	1 1/2" ID-2 Bituminous Wear Course	2006	2006	Contract No. 2006-1	30,015.00	0	30,015.00	HWW-115	466.3	717	1.538	46,163	1.000	46,163
354	354	4" ID-2 Bituminous Binder Course	2006	2006	Contract No. 2006-1	53,690.00	0	53,690.00	HWW-115	466.3	717	1.538	82,575	1.000	82,575
354	354	Access Road Construction	0	1995	Contract No. 2006-1	-	0	-	HWW-115	316	717	2.269	-	1.000	-
354	354	Crush Stone Base Course	2006	2006	Contract No. 2006-1	70,000.00	0	70,000.00	HWW-115	466.3	717	1.538	107,660	1.000	107,660
354	354	Geotextile Material	2006	2006	Contract No. 2006-1	18,000.00	0	18,000.00	HWW-115	466.3	717	1.538	27,684	1.000	27,684
354	354	Crushed Limestone Shoulder	2006	2006	Contract No. 2006-1	4,800.00	0	4,800.00	HWW-115	466.3	717	1.538	7,382	1.000	7,382
354	354	24" HDPE Storm Sewer Installation	2006	2006	Contract No. 2006-1	1,000.00	0	1,000.00	HWW-115	466.3	717	1.538	1,538	1.000	1,538
354	354	Mobilization/Demobilization	2006	2006	Contract No. 2006-1	5,500.00	0	5,500.00	HWW-115	466.3	717	1.538	8,459	1.000	8,459
354	354	ALT for PA2A Material on Shoulder	2006	2006	Contract No. 2006-1	3,000.00	0	3,000.00	HWW-115	466.3	717	1.538	4,614	1.000	4,614
354	354	Other Costs	0	1995	Other Costs - Sanitary Sewers, Pump Station, Force Main and Access Road	74,038.22	0	74,038.22	HWW-115	316	717	2.269	167,993	1.000	167,993
354	354	Lynch & Lynch	1994	1994	0	46,925.60	0	46,925.60	HWW-115	308	717	2.328	109,243	1.000	109,243
354	354	Woods & Baker	1994	1994	0	31,451.50	0	31,451.50	HWW-115	308	717	2.328	73,219	1.000	73,219
354	354	Junipers	1996	1996	0	3,150.00	Item 7 under 354	3,150.00	HWW-115	321	717	2.234	7,037	1.000	7,037
354	354	2 Boilers	2007	2007	0	14,535.00	0	14,535.00	HWW-115	466.3	717	1.445	21,003	1.000	21,003
354	354	HTP Elite 80 boiler Kinzua WWTP	2010	2010	0	5,690.00	0	5,690.00	HWW-115	559.8	717	1.281	7,289	1.000	7,289
354	354	Boiler	2015	2015	0	10,266.40	0	10,266.40	HWW-115	647.3	717	1.108	11,375	1.000	11,375
354	354	Kenmore Freezer	2017	2017	0	508.00	Item 27 under 354	508.00	HWW-115	675.3	717	1.062	540	1.000	540
354	354	Pole Lighting - WWTP Kinzua & Pine	2017	2017	0	5,469.41	Item 20 Under 354	5,469.41	HWW-115	675.3	717	1.062	5,830	1.000	5,830
354	354	Legal	1996	1996	0	79,172.10	0	79,172.10	HWW-115	321	717	2.234	176,870	1.000	176,870
354	354	Admin	1996	1996	0	13,264.93	0	13,264.93	HWW-115	321	717	2.234	29,634	1.000	29,634
354	354	Engineering - Basic (BCM)	1996	1996	0	515,000.00	0	515,000.00	HWW-115	321	717	2.234	1,150,510	1.000	1,150,510
354	354	Engineering - inspection (BCM)	1996	1996	0	202,600.00	0	202,600.00	HWW-115	321	717	2.234	452,608	1.000	452,608
354	354	Engineering - Additional (BCM)	1996	1996	0	36,075.81	0	36,075.81	HWW-115	321	717	2.234	80,593	1.000	80,593
354	354	Engineering - Basic (KLH)	1996	1996	0	240,503.29	0	240,503.29	HWW-115	321	717	2.234	537,284	1.000	537,284
354	354	Engineering - inspection (KLH)	1996	1996	0	296,500.00	0	296,500.00	HWW-115	321	717	2.234	662,381	1.000	662,381
354	354	Engineering - additional (KLH)	1996	1996	0	108,582.95	0	108,582.95	HWW-115	321	717	2.234	242,574	1.000	242,574
354	354	Interest per contract	1996	1996	0	413,705.00	0	413,705.00	HWW-115	321	717	2.234	924,217	1.000	924,217
354	354	Refinancing	1996	1996	0	317,516.75	0	317,516.75	HWW-115	321	717	2.234	709,332	1.000	709,332

Pennsylvania American Water Company
Borough of Kane Authority
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	Last Norman Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	354	354 Relocation expenses	1996	1996	0	8,233.65	0	8,233.65	HWW-115	321	717	2.234	18,394	1.000	18,394
	354	354 Additional Authority paid expenditures	1996	1996	0	84,281.44	0	84,281.44	HWW-115	321	717	2.234	188,285	1.000	188,285
	354	354 Kinzua Oil Well	1999	1999	0	16,248.53	0	16,248.53	HWW-115	343	717	2.090	33,959	1.000	33,959
	354	354 Engineering - West Run Interceptor	2001	2001	0	16,758.55	0	16,758.55	HWW-115	378	717	1.897	31,791	1.000	31,791
	354	354 Holman St. Project - Engineering	2002	2002	0	10,446.11	0	10,446.11	HWW-115	388.6	717	1.844	19,263	1.000	19,263
	354	354 Patching - Wetmore Ave	2003	2003	0	5,466.30	0	5,466.30	HWW-115	393.5	717	1.822	9,960	1.000	9,960
	354	354 New roof - KWWTP	2006	2006	0	5,962.00	0	5,962.00	HWW-115	466.3	717	1.538	9,170	1.000	9,170
	354	354 Pine St. New Trinity Boiler (Allied Systems)	2012	2012	0	6,242.00	0	6,242.00	HWW-115	603.8	717	1.187	7,409	1.000	7,409
	354	354 Structures & Improvements	SUB-TOTAL =			9,477,073.12		9,477,073.12					21,158,501	1.000	21,158,501
360 - Collection Sewers - Force															
	360	360 3" Diameter Force Main	2004	2004	Contract 2003-2 - General/Mechanical Construction	25,258.50	0	25,258.50	HWW-144	382.6	595.4	1.642	41,474	1.000	41,474
	360	360 4" Diameter Force Main	1995	1995	Contract 93-1 - West Kane Area Sewer	29,271.00	0	29,271.00	HWW-144	277.5	595.4	2.146	62,816	1.000	62,816
	360	360 Manholes Frame & Covers	1995	1995	Contract 93-1 - West Kane Area Sewer	9,000.00	0	9,000.00	HWW-144	277.5	595.4	2.146	19,314	1.000	19,314
	360	360 Inflow Protectors	1995	1995	Contract 93-1 - West Kane Area Sewer	2,400.00	0	2,400.00	HWW-144	277.5	595.4	2.146	5,150	1.000	5,150
	360	360 4" Diameter Force Main	1996	1996	Contract 93-2 - Route 66 Area Sewers	72,853.00	0	72,853.00	HWW-144	284.9	595.4	2.090	152,263	1.000	152,263
	360	360 Air Release Valve and Vault	1996	1996	Contract 93-2 - Route 66 Area Sewers	3,200.00	0	3,200.00	HWW-144	284.9	595.4	2.090	6,688	1.000	6,688
	360	360 2" Dia Force Main	1996	1996	Contract 93-2 - Route 66 Area Sewers	32,418.00	0	32,418.00	HWW-144	284.9	595.4	2.090	67,754	1.000	67,754
	360	360 1 1/2 Diameter Service FM	1996	1996	Contract 93-2 - Route 66 Area Sewers	3,664.00	0	3,664.00	HWW-144	284.9	595.4	2.090	7,658	1.000	7,658
	360	360 4" Diameter FM	1996	1996	Contract 93-3 - Westwind Area Sewers	17,257.50	0	17,257.50	HWW-144	284.9	595.4	2.090	36,068	1.000	36,068
	360	360 1 1/2" Diameter Service FM	1996	1996	Contract 93-3 - Westwind Area Sewers	12,718.75	0	12,718.75	HWW-144	284.9	595.4	2.090	26,582	1.000	26,582
	360	360 4" Diameter Force Main	1995	1995	Contract 93-4 - East Kane Sewer	90,240.00	0	90,240.00	HWW-144	277.5	595.4	2.146	193,655	1.000	193,655
	360	360 6" Diameter Force Main	1995	1995	Contract 93-4 - East Kane Sewer	45,528.00	0	45,528.00	HWW-144	277.5	595.4	2.146	97,703	1.000	97,703
	360	360 1 1/2 Diameter Service FM	1996	1996	Contract 93-5 - Greendale Area Sewers	-	0	-	HWW-144	284.9	595.4	2.090	-	1.000	-
	360	360 4" Diameter Force Main	1995	1995	Contract 93-6 - Northwest Area Sewers	86,144.00	0	86,144.00	HWW-144	277.5	595.4	2.146	184,865	1.000	184,865
	360	360 Air Release Valve Vault	1995	1995	Contract 93-6 - Northwest Area Sewers	2,800.00	0	2,800.00	HWW-144	277.5	595.4	2.146	6,009	1.000	6,009
	360	360 Force Main Signs	1995	1995	Contract 93-6 - Northwest Area Sewers	1,358.38	0	1,358.38	HWW-144	277.5	595.4	2.146	2,915	1.000	2,915
	360	360 Collection Sewers - Force	SUB-TOTAL =			434,111.13		434,111.13					910,914	1.000	910,914
361 - Collection Sewers - Gravity															
	361	361 2-inch VCP Sewer	1968	1968	1967 Project	195.64	Estimated using ENR Construction Cost Index	195.64	HWW-144	74.7	595.4	7.971	1,559	1.000	1,559
	361	361 4-inch VCP Sewer	1968	1968	1967 Project	4,850.73	Estimated using ENR Construction Cost Index	4,850.73	HWW-144	74.7	595.4	7.971	38,665	1.000	38,665
	361	361 6-inch VCP Sewer	1968	1968	1967 Project	18,812.79	Estimated using ENR Construction Cost Index	18,812.79	HWW-144	74.7	595.4	7.971	149,957	1.000	149,957
	361	361 8-inch VCP Sewer	1968	1968	1967 Project	434,294.49	Estimated using ENR Construction Cost Index	434,294.49	HWW-144	74.7	595.4	7.971	3,461,781	1.000	3,461,781
	361	361 10-inch VCP Sewer	1968	1968	1967 Project	196,281.75	Estimated using ENR Construction Cost Index	196,281.75	HWW-144	74.7	595.4	7.971	1,564,562	1.000	1,564,562
	361	361 12-inch VCP Sewer	1968	1968	1967 Project	207,151.87	Estimated using ENR Construction Cost Index	207,151.87	HWW-144	74.7	595.4	7.971	1,651,208	1.000	1,651,208
	361	361 15-inch VCP Sewer	1968	1968	1967 Project	16,018.43	Estimated using ENR Construction Cost Index	16,018.43	HWW-144	74.7	595.4	7.971	127,683	1.000	127,683
	361	361 16-inch VCP Sewer	1968	1968	1967 Project	660.88	Estimated using ENR Construction Cost Index	660.88	HWW-144	74.7	595.4	7.971	5,268	1.000	5,268
	361	361 18-inch VCP Sewer	1968	1968	1967 Project	5,308.72	Estimated using ENR Construction Cost Index	5,308.72	HWW-144	74.7	595.4	7.971	42,316	1.000	42,316
	361	361 20-inch VCP Sewer	1968	1968	1967 Project	7,373.16	Estimated using ENR Construction Cost Index	7,373.16	HWW-144	74.7	595.4	7.971	58,771	1.000	58,771

Pennsylvania American Water Company
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)			(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed			Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
							OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input			Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input			Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed			Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
361	361	21-inch VCP Sewer	1968	1968	1967 Project	34,619.77	Estimated using ENR Construction Cost Index	34,619.77	HWW-144	74.7	595.4	7.971	275,954	1.000	275,954
361	361	24-inch VCP Sewer	1968	1968	1967 Project	32,817.43	Estimated using ENR Construction Cost Index	32,817.43	HWW-144	74.7	595.4	7.971	261,588	1.000	261,588
361	361	30-inch VCP Sewer	1968	1968	1967 Project	7,274.75	Estimated using ENR Construction Cost Index	7,274.75	HWW-144	74.7	595.4	7.971	57,987	1.000	57,987
361	361	Manholes (Walls and Base)	1968	1968	1967 Project	16,810.89	Estimated using ENR Construction Cost Index	16,810.89	HWW-144	74.7	595.4	7.971	134,000	1.000	134,000
361	361	Manhole Frame and Cover	1968	1968	1967 Project	16,810.89	Estimated using ENR Construction Cost Index	16,810.89	HWW-144	74.7	595.4	7.971	134,000	1.000	134,000
361	361	Sewer Probe	2003	2003	Borough of Kane Original Cost of Inventory/Assets	1,321.10	0	1,321.10	HWW-144	341	595.4	1.746	2,307	1.000	2,307
361	361	0-8 Ft Deep	2004	2004	Contract 2003-2 - General/Mechanical Construction	34,276.00	0	34,276.00	HWW-144	362.6	595.4	1.642	56,281	1.000	56,281
361	361	8-12 Ft Deep	2004	2004	Contract 2003-2 - General/Mechanical Construction	23,750.00	0	23,750.00	HWW-144	362.6	595.4	1.642	38,998	1.000	38,998
361	361	Over 12 Ft	2004	2004	Contract 2003-2 - General/Mechanical Construction	1,120.00	0	1,120.00	HWW-144	362.6	595.4	1.642	1,839	1.000	1,839
361	361	8" PVC Caps	2004	2004	Contract 2003-2 - General/Mechanical Construction	60.00	0	60.00	HWW-144	362.6	595.4	1.642	99	1.000	99
361	361	M.H. 0-6' Deep	2004	2004	Contract 2003-2 - General/Mechanical Construction	25,200.00	0	25,200.00	HWW-144	362.6	595.4	1.642	41,378	1.000	41,378
361	361	Manhole Barrel Over 6' VF	2004	2004	Contract 2003-2 - General/Mechanical Construction	1,080.00	0	1,080.00	HWW-144	362.6	595.4	1.642	1,773	1.000	1,773
361	361	Standard Manhole Frame & Covers	2004	2004	Contract 2003-2 - General/Mechanical Construction	3,500.00	0	3,500.00	HWW-144	362.6	595.4	1.642	5,747	1.000	5,747
361	361	Stainless Steel Inflow Protector	2004	2004	Contract 2003-2 - General/Mechanical Construction	4,900.00	0	4,900.00	HWW-144	362.6	595.4	1.642	8,046	1.000	8,046
361	361	Core Drill Manhole	2004	2004	Contract 2003-2 - General/Mechanical Construction	500.00	0	500.00	HWW-144	362.6	595.4	1.642	821	1.000	821
361	361	Mobilization/Project Closeout	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	7,000.00	0	7,000.00	HWW-144	264.7	595.4	2.249	15,743	1.000	15,743
361	361	Select Backfill	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	28,080.00	0	28,080.00	HWW-144	264.7	595.4	2.249	63,152	1.000	63,152
361	361	PADOT Shoulder Restoration	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	4,491.00	0	4,491.00	HWW-144	264.7	595.4	2.249	10,100	1.000	10,100
361	361	Township Road Restoration	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	2,525.00	0	2,525.00	HWW-144	264.7	595.4	2.249	5,679	1.000	5,679
361	361	Change Order 3	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	8,775.00	0	8,775.00	HWW-144	264.7	595.4	2.249	19,735	1.000	19,735
361	361	Change Order 4	1995	1995	Contract 7-92 - Kinzua Road Interceptor Sewer	825.00	0	825.00	HWW-144	277.5	595.4	2.146	1,770	1.000	1,770
361	361	30-inch Sewer up to 5' deep	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	5,250.00	0	5,250.00	HWW-144	264.7	595.4	2.249	11,807	1.000	11,807
361	361	30-inch Sewer 5' to 7' deep	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	16,200.00	0	16,200.00	HWW-144	264.7	595.4	2.249	36,434	1.000	36,434
361	361	30-inch Sewer 7' to 9' deep	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	173,082.00	0	173,082.00	HWW-144	264.7	595.4	2.249	389,261	1.000	389,261
361	361	30-inch Sewer 9' to 11' deep	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	68,040.00	0	68,040.00	HWW-144	264.7	595.4	2.249	153,022	1.000	153,022
361	361	30-inch PVC Sewer 11' to 13' deep	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	27,720.00	0	27,720.00	HWW-144	264.7	595.4	2.249	62,342	1.000	62,342
361	361	30-inch PVC Sewer over 13' deep	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	49,650.00	0	49,650.00	HWW-144	264.7	595.4	2.249	111,663	1.000	111,663
361	361	30-inch DIP Encase Stream Xing	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	3,500.00	0	3,500.00	HWW-144	264.7	595.4	2.249	7,872	1.000	7,872
361	361	30-inch sewer connections	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	2,000.00	0	2,000.00	HWW-144	264.7	595.4	2.249	4,498	1.000	4,498

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)			(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed			Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
							OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input			Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	Aus Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input			Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed			Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
361	361	Miscellaneous Concrete	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	1,500.00	0	1,500.00	HWW-144	264.7	595.4	2.249	3,374	1.000	3,374
361	361	5-foot Manholes, 5'-0" or less depth	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	42,500.00	0	42,500.00	HWW-144	264.7	595.4	2.249	95,583	1.000	95,583
361	361	Extra Depth Manholes over 5'-0'	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	7,500.00	0	7,500.00	HWW-144	264.7	595.4	2.249	16,868	1.000	16,868
361	361	PADOT Highway Crossing	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	12,000.00	0	12,000.00	HWW-144	264.7	595.4	2.249	26,988	1.000	26,988
361	361	Grout Road Bore (C.O. No. 1)	1994	1994	Contract 7-92 - Kinzua Road Interceptor Sewer	4,800.00	0	4,800.00	HWW-144	264.7	595.4	2.249	10,795	1.000	10,795
361	361	Exploratory Excavations	1995	1995	Contract 93-1 - West Kane Area Sewer	200.00	0	200.00	HWW-144	277.5	595.4	2.146	429	1.000	429
361	361	Special Backfill	1995	1995	Contract 93-1 - West Kane Area Sewer	18,972.80	0	18,972.80	HWW-144	277.5	595.4	2.146	40,716	1.000	40,716
361	361	Mobilization/Demobilization	1995	1995	Contract 93-1 - West Kane Area Sewer	13,000.00	0	13,000.00	HWW-144	277.5	595.4	2.146	27,898	1.000	27,898
361	361	Bituminous Pavement Trench Restoration	1995	1995	Contract 93-1 - West Kane Area Sewer	9,769.73	0	9,769.73	HWW-144	277.5	595.4	2.146	20,966	1.000	20,966
361	361	Change Order 1	1995	1995	Contract 93-1 - West Kane Area Sewer	1,505.00	0	1,505.00	HWW-144	277.5	595.4	2.146	3,230	1.000	3,230
361	361	a 0-8 Ft Deep	1995	1995	Contract 93-1 - West Kane Area Sewer	134,684.00	0	134,684.00	HWW-144	277.5	595.4	2.146	289,032	1.000	289,032
361	361	b 8-12 Ft. Deep	1995	1995	Contract 93-1 - West Kane Area Sewer	49,680.00	0	49,680.00	HWW-144	277.5	595.4	2.146	106,613	1.000	106,613
361	361	Manholes	1995	1995	Contract 93-1 - West Kane Area Sewer	67,620.00	0	67,620.00	HWW-144	277.5	595.4	2.146	145,113	1.000	145,113
361	361	Concrete Encasement	1995	1995	Contract 93-1 - West Kane Area Sewer	720.00	0	720.00	HWW-144	277.5	595.4	2.146	1,545	1.000	1,545
361	361	Concrete Thrust Blocks	1995	1995	Contract 93-1 - West Kane Area Sewer	-	0	-	HWW-144	277.5	595.4	2.146	-	1.000	-
361	361	Air Testing - Sewers	1995	1995	Contract 93-1 - West Kane Area Sewer	4,138.00	0	4,138.00	HWW-144	277.5	595.4	2.146	8,880	1.000	8,880
361	361	Hydrostatic Testing - FM	1995	1995	Contract 93-1 - West Kane Area Sewer	1,330.50	0	1,330.50	HWW-144	277.5	595.4	2.146	2,855	1.000	2,855
361	361	Vacuum Testing- MH	1995	1995	Contract 93-1 - West Kane Area Sewer	4,100.00	0	4,100.00	HWW-144	277.5	595.4	2.146	8,799	1.000	8,799
361	361	Internal TV Inspection Sewers	1995	1995	Contract 93-1 - West Kane Area Sewer	4,652.40	0	4,652.40	HWW-144	277.5	595.4	2.146	9,984	1.000	9,984
361	361	Exploratory Excavation	1996	1996	Contract 93-2 - Route 66 Area Sewers	100.00	0	100.00	HWW-144	284.9	595.4	2.090	209	1.000	209
361	361	Special Backfill	1996	1996	Contract 93-2 - Route 66 Area Sewers	27,528.00	0	27,528.00	HWW-144	284.9	595.4	2.090	57,534	1.000	57,534
361	361	Mobilization/Demobilization	1996	1996	Contract 93-2 - Route 66 Area Sewers	21,000.00	0	21,000.00	HWW-144	284.9	595.4	2.090	43,890	1.000	43,890
361	361	Bituminous Pavement Trench Restoration	1996	1996	Contract 93-2 - Route 66 Area Sewers	23,072.10	0	23,072.10	HWW-144	284.9	595.4	2.090	48,221	1.000	48,221
361	361	0-8 Ft Deep	1996	1996	Contract 93-2 - Route 66 Area Sewers	178,541.00	0	178,541.00	HWW-144	284.9	595.4	2.090	373,151	1.000	373,151
361	361	8-12 Ft Deep	1996	1996	Contract 93-2 - Route 66 Area Sewers	87,192.00	0	87,192.00	HWW-144	284.9	595.4	2.090	182,231	1.000	182,231
361	361	12 - 16 Ft Deep	1996	1996	Contract 93-2 - Route 66 Area Sewers	9,558.00	0	9,558.00	HWW-144	284.9	595.4	2.090	19,976	1.000	19,976
361	361	12" Diameter Bore	1996	1996	Contract 93-2 - Route 66 Area Sewers	7,200.00	0	7,200.00	HWW-144	284.9	595.4	2.090	15,048	1.000	15,048
361	361	16" Diameter Bore	1996	1996	Contract 93-2 - Route 66 Area Sewers	22,475.00	0	22,475.00	HWW-144	284.9	595.4	2.090	46,973	1.000	46,973
361	361	Manholes	1996	1996	Contract 93-2 - Route 66 Area Sewers	97,324.00	0	97,324.00	HWW-144	284.9	595.4	2.090	203,407	1.000	203,407
361	361	Concrete Encasement	1996	1996	Contract 93-2 - Route 66 Area Sewers	1,800.00	0	1,800.00	HWW-144	284.9	595.4	2.090	3,762	1.000	3,762
361	361	Concrete Thrust Blocks	1996	1996	Contract 93-2 - Route 66 Area Sewers	400.00	0	400.00	HWW-144	284.9	595.4	2.090	836	1.000	836
361	361	Air Testing Sewer	1996	1996	Contract 93-2 - Route 66 Area Sewers	6,827.75	0	6,827.75	HWW-144	284.9	595.4	2.090	14,270	1.000	14,270
361	361	Hydrostatic Testing - FM	1996	1996	Contract 93-2 - Route 66 Area Sewers	5,341.50	0	5,341.50	HWW-144	284.9	595.4	2.090	11,164	1.000	11,164
361	361	Vacuum Test Manholes	1996	1996	Contract 93-2 - Route 66 Area Sewers	6,000.00	0	6,000.00	HWW-144	284.9	595.4	2.090	12,540	1.000	12,540
361	361	Internal TV Inspection	1996	1996	Contract 93-2 - Route 66 Area Sewers	7,261.50	0	7,261.50	HWW-144	284.9	595.4	2.090	15,177	1.000	15,177
361	361	Manhole Frames and Covers	1996	1996	Contract 93-2 - Route 66 Area Sewers	12,600.00	0	12,600.00	HWW-144	284.9	595.4	2.090	26,334	1.000	26,334
361	361	Inflow Protectors	1996	1996	Contract 93-2 - Route 66 Area Sewers	2,400.00	0	2,400.00	HWW-144	284.9	595.4	2.090	5,016	1.000	5,016
361	361	Exploratory Excavation	1996	1996	Contract 93-3 - Westwind Area Sewers	1,500.00	0	1,500.00	HWW-144	284.9	595.4	2.090	3,135	1.000	3,135
361	361	Special Backfill	1996	1996	Contract 93-3 - Westwind Area Sewers	43,828.48	0	43,828.48	HWW-144	284.9	595.4	2.090	91,602	1.000	91,602
361	361	Mobilization/Demobilization	1996	1996	Contract 93-3 - Westwind Area Sewers	9,917.40	0	9,917.40	HWW-144	284.9	595.4	2.090	20,727	1.000	20,727
361	361	Bituminous Pavement Trench Restoration	1996	1996	Contract 93-3 - Westwind Area Sewers	12,200.50	0	12,200.50	HWW-144	284.9	595.4	2.090	25,499	1.000	25,499
361	361	Field Office	1996	1996	Contract 93-3 - Westwind Area Sewers	6,500.00	0	6,500.00	HWW-144	284.9	595.4	2.090	13,585	1.000	13,585
361	361	Bituminous Paving	1996	1996	Contract 93-3 - Westwind Area Sewers	74,152.00	0	74,152.00	HWW-144	284.9	595.4	2.090	154,978	1.000	154,978
361	361	Job Trailer Time Extension	1996	1996	Contract 93-3 - Westwind Area Sewers	1,083.34	0	1,083.34	HWW-144	284.9	595.4	2.090	2,264	1.000	2,264
361	361	0-8 Ft Deep	1996	1996	Contract 93-3 - Westwind Area Sewers	268,037.50	0	268,037.50	HWW-144	284.9	595.4	2.090	560,196	1.000	560,196
361	361	8-12 Ft Deep	1996	1996	Contract 93-3 - Westwind Area Sewers	178,837.50	0	178,837.50	HWW-144	284.9	595.4	2.090	373,770	1.000	373,770
361	361	12 - 16 Ft Deep	1996	1996	Contract 93-3 - Westwind Area Sewers	33,962.50	0	33,962.50	HWW-144	284.9	595.4	2.090	70,982	1.000	70,982
361	361	18" Diameter Bore	1996	1996	Contract 93-3 - Westwind Area Sewers	45,400.00	0	45,400.00	HWW-144	284.9	595.4	2.090	94,886	1.000	94,886
361	361	Manholes	1996	1996	Contract 93-3 - Westwind Area Sewers	91,816.20	0	91,816.20	HWW-144	284.9	595.4	2.090	191,896	1.000	191,896
361	361	Concrete Encasement	1996	1996	Contract 93-3 - Westwind Area Sewers	5,000.00	0	5,000.00	HWW-144	284.9	595.4	2.090	10,450	1.000	10,450
361	361	Concrete Thrust Blocks	1996	1996	Contract 93-3 - Westwind Area Sewers	200.00	0	200.00	HWW-144	284.9	595.4	2.090	418	1.000	418

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)			(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed			Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
							OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input			Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input			Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed			Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
361	361	Air Testing Sewer	1996	1996	Contract 93-3 - Westwnd Area Sewers	4,525.40	0	4,525.40	HWW-144	284.9	595.4	2.090	9,458	1.000	9,458
361	361	Hydrostatic Testing-FM	1996	1996	Contract 93-3 - Westwnd Area Sewers	1,150.50	0	1,150.50	HWW-144	284.9	595.4	2.090	2,405	1.000	2,405
361	361	Vacuum Test Manholes	1996	1996	Contract 93-3 - Westwnd Area Sewers	4,450.00	0	4,450.00	HWW-144	284.9	595.4	2.090	9,301	1.000	9,301
361	361	Internal TV inspection	1996	1996	Contract 93-3 - Westwnd Area Sewers	7,697.60	0	7,697.60	HWW-144	284.9	595.4	2.090	16,088	1.000	16,088
361	361	Manhole Frames and Covers	1996	1996	Contract 93-3 - Westwnd Area Sewers	23,140.00	0	23,140.00	HWW-144	284.9	595.4	2.090	48,363	1.000	48,363
361	361	Inflow Protectors	1996	1996	Contract 93-3 - Westwnd Area Sewers	1,200.00	0	1,200.00	HWW-144	284.9	595.4	2.090	2,508	1.000	2,508
361	361	Manhole Ring Adjustment	1996	1996	Contract 93-3 - Westwnd Area Sewers	3,250.00	0	3,250.00	HWW-144	284.9	595.4	2.090	6,793	1.000	6,793
361	361	Exploratory Excavations	1995	1995	Contract 93-4 - East Kane Sewer	800.00	0	800.00	HWW-144	277.5	595.4	2.146	1,717	1.000	1,717
361	361	Special Backfill	1995	1995	Contract 93-4 - East Kane Sewer	857.31	0	857.31	HWW-144	277.5	595.4	2.146	1,840	1.000	1,840
361	361	Mobilization/Demobilization	1995	1995	Contract 93-4 - East Kane Sewer	85,000.00	0	85,000.00	HWW-144	277.5	595.4	2.146	182,410	1.000	182,410
361	361	Bituminous Pavement Trench Restoration	1995	1995	Contract 93-4 - East Kane Sewer	19,200.00	0	19,200.00	HWW-144	277.5	595.4	2.146	41,203	1.000	41,203
361	361	Furnish and Install (6) signs to locate Force Main	1995	1995	Contract 93-4 - East Kane Sewer	900.00	0	900.00	HWW-144	277.5	595.4	2.146	1,931	1.000	1,931
361	361	Dug up Bore Pit then backfilled it in	1995	1995	Contract 93-4 - East Kane Sewer	1,740.06	0	1,740.06	HWW-144	277.5	595.4	2.146	3,734	1.000	3,734
361	361	a 0-8 Ft Deep	1995	1995	Contract 93-4 - East Kane Sewer	341,469.90	0	341,469.90	HWW-144	277.5	595.4	2.146	732,794	1.000	732,794
361	361	b 8-12 Ft. Deep	1995	1995	Contract 93-4 - East Kane Sewer	139,050.00	0	139,050.00	HWW-144	277.5	595.4	2.146	298,401	1.000	298,401
361	361	16" Diameter Steel Casing Boring	1995	1995	Contract 93-4 - East Kane Sewer	132,300.00	0	132,300.00	HWW-144	277.5	595.4	2.146	283,916	1.000	283,916
361	361	Manholes	1995	1995	Contract 93-4 - East Kane Sewer	99,451.80	0	99,451.80	HWW-144	277.5	595.4	2.146	213,424	1.000	213,424
361	361	Concrete Encasement	1995	1995	Contract 93-4 - East Kane Sewer	37,050.00	0	37,050.00	HWW-144	277.5	595.4	2.146	79,509	1.000	79,509
361	361	Concrete Thrust Blocks	1995	1995	Contract 93-4 - East Kane Sewer	3,960.00	0	3,960.00	HWW-144	277.5	595.4	2.146	8,498	1.000	8,498
361	361	Air Testing - Sewers	1995	1995	Contract 93-4 - East Kane Sewer	1,881.13	0	1,881.13	HWW-144	277.5	595.4	2.146	4,037	1.000	4,037
361	361	Hydrostatic Testing - FM	1995	1995	Contract 93-4 - East Kane Sewer	2,710.50	0	2,710.50	HWW-144	277.5	595.4	2.146	5,817	1.000	5,817
361	361	Vacuum Testing- MH	1995	1995	Contract 93-4 - East Kane Sewer	102.00	0	102.00	HWW-144	277.5	595.4	2.146	219	1.000	219
361	361	Internal TV Inspection Sewers	1995	1995	Contract 93-4 - East Kane Sewer	8,711.15	0	8,711.15	HWW-144	277.5	595.4	2.146	18,694	1.000	18,694
361	361	Manholes Frame & Covers	1995	1995	Contract 93-4 - East Kane Sewer	25,250.00	0	25,250.00	HWW-144	277.5	595.4	2.146	54,187	1.000	54,187
361	361	Inflow Protectors	1995	1995	Contract 93-4 - East Kane Sewer	1,200.00	0	1,200.00	HWW-144	277.5	595.4	2.146	2,575	1.000	2,575
361	361	Special Backfill	1996	1996	Contract 93-5 - Greendale Area Sewers	4,086.00	0	4,086.00	HWW-144	284.9	595.4	2.090	8,540	1.000	8,540
361	361	Air Testing Sewer	1996	1996	Contract 93-5 - Greendale Area Sewers	2,208.40	0	2,208.40	HWW-144	284.9	595.4	2.090	4,616	1.000	4,616
361	361	Mobilization/Demobilization	1996	1996	Contract 93-5 - Greendale Area Sewers	16,000.00	0	16,000.00	HWW-144	284.9	595.4	2.090	33,440	1.000	33,440
361	361	Bituminous Pavement Trench Restoration	1996	1996	Contract 93-5 - Greendale Area Sewers	11,079.45	0	11,079.45	HWW-144	284.9	595.4	2.090	23,156	1.000	23,156
361	361	0-8 Ft Deep	1996	1996	Contract 93-5 - Greendale Area Sewers	315,169.00	0	315,169.00	HWW-144	284.9	595.4	2.090	658,703	1.000	658,703
361	361	8-12 Ft Deep	1996	1996	Contract 93-5 - Greendale Area Sewers	161,973.00	0	161,973.00	HWW-144	284.9	595.4	2.090	338,524	1.000	338,524
361	361	12 - 16 Ft Deep	1996	1996	Contract 93-5 - Greendale Area Sewers	54,985.00	0	54,985.00	HWW-144	284.9	595.4	2.090	114,919	1.000	114,919
361	361	Over 16 Ft Deep	1996	1996	Contract 93-5 - Greendale Area Sewers	39,480.00	0	39,480.00	HWW-144	284.9	595.4	2.090	82,513	1.000	82,513
361	361	16" Diameter Bore	1996	1996	Contract 93-5 - Greendale Area Sewers	9,000.00	0	9,000.00	HWW-144	284.9	595.4	2.090	18,810	1.000	18,810
361	361	18" Diameter Bore	1996	1996	Contract 93-5 - Greendale Area Sewers	13,500.00	0	13,500.00	HWW-144	284.9	595.4	2.090	28,215	1.000	28,215
361	361	Manholes	1996	1996	Contract 93-5 - Greendale Area Sewers	96,279.15	0	96,279.15	HWW-144	284.9	595.4	2.090	201,223	1.000	201,223
361	361	Concrete Encasement	1996	1996	Contract 93-5 - Greendale Area Sewers	3,000.00	0	3,000.00	HWW-144	284.9	595.4	2.090	6,270	1.000	6,270
361	361	Exploratory Excavation	1996	1996	Contract 93-5 - Greendale Area Sewers	1,950.00	0	1,950.00	HWW-144	284.9	595.4	2.090	4,076	1.000	4,076
361	361	Vacuum Test Manholes	1996	1996	Contract 93-5 - Greendale Area Sewers	5,050.00	0	5,050.00	HWW-144	284.9	595.4	2.090	10,555	1.000	10,555
361	361	Internal TV Inspection	1996	1996	Contract 93-5 - Greendale Area Sewers	22,260.00	0	22,260.00	HWW-144	284.9	595.4	2.090	46,523	1.000	46,523
361	361	Manhole Frames and Covers	1996	1996	Contract 93-5 - Greendale Area Sewers	26,500.00	0	26,500.00	HWW-144	284.9	595.4	2.090	55,385	1.000	55,385
361	361	Inflow Protectors	1996	1996	Contract 93-5 - Greendale Area Sewers	840.00	0	840.00	HWW-144	284.9	595.4	2.090	1,756	1.000	1,756
361	361	Exploratory Excavations	1995	1995	Contract 93-6 - Northwest Area Sewers	300.00	0	300.00	HWW-144	277.5	595.4	2.146	644	1.000	644
361	361	Special Backfill	1995	1995	Contract 93-6 - Northwest Area Sewers	10,630.80	0	10,630.80	HWW-144	277.5	595.4	2.146	22,814	1.000	22,814
361	361	Mobilization/Demobilization	1995	1995	Contract 93-6 - Northwest Area Sewers	3,000.00	0	3,000.00	HWW-144	277.5	595.4	2.146	6,438	1.000	6,438
361	361	Bituminous Pavement Trench Restoration	1995	1995	Contract 93-6 - Northwest Area Sewers	2,280.00	0	2,280.00	HWW-144	277.5	595.4	2.146	4,893	1.000	4,893
361	361	0-8 Ft Deep	1995	1995	Contract 93-6 - Northwest Area Sewers	20,016.00	0	20,016.00	HWW-144	277.5	595.4	2.146	42,954	1.000	42,954
361	361	8-12 Ft. Deep	1995	1995	Contract 93-6 - Northwest Area Sewers	54,483.00	0	54,483.00	HWW-144	277.5	595.4	2.146	116,921	1.000	116,921
361	361	12-16 Ft. Deep	1995	1995	Contract 93-6 - Northwest Area Sewers	46,942.00	0	46,942.00	HWW-144	277.5	595.4	2.146	100,738	1.000	100,738
361	361	12" Diameter Boring	1995	1995	Contract 93-6 - Northwest Area Sewers	5,100.00	0	5,100.00	HWW-144	277.5	595.4	2.146	10,945	1.000	10,945
361	361	16" Diameter Boring	1995	1995	Contract 93-6 - Northwest Area Sewers	18,000.00	0	18,000.00	HWW-144	277.5	595.4	2.146	38,628	1.000	38,628
361	361	Manholes	1995	1995	Contract 93-6 - Northwest Area Sewers	57,504.60	0	57,504.60	HWW-144	277.5	595.4	2.146	123,405	1.000	123,405
361	361	Concrete Encasement	1995	1995	Contract 93-6 - Northwest Area Sewers	700.00	0	700.00	HWW-144	277.5	595.4	2.146	1,502	1.000	1,502
361	361	Concrete Thrust Blocks	1995	1995	Contract 93-6 - Northwest Area Sewers	270.00	0	270.00	HWW-144	277.5	595.4	2.146	579	1.000	579
361	361	Air Testing - Sewers	1995	1995	Contract 93-6 - Northwest Area Sewers	2,508.05	0	2,508.05	HWW-144	277.5	595.4	2.146	5,382	1.000	5,382

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)			(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed			Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
							OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input			Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Nemitin Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input			Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed			Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	361	361 Hydrostatic Testing - FM	1995	1995	Contract 93-6 - Northwest Area Sewers	2,692.00	0	2,692.00	HWW-144	277.5	595.4	2.146	5,777	1.000	5,777
	361	361 Vacuum Testing- MH	1995	1995	Contract 93-6 - Northwest Area Sewers	2,480.00	0	2,480.00	HWW-144	277.5	595.4	2.146	5,322	1.000	5,322
	361	361 Internal TV Inspection Sewers	1995	1995	Contract 93-6 - Northwest Area Sewers	3,640.50	0	3,640.50	HWW-144	277.5	595.4	2.146	7,813	1.000	7,813
	361	361 Manholes Frame & Covers	1995	1995	Contract 93-6 - Northwest Area Sewers	5,800.00	0	5,800.00	HWW-144	277.5	595.4	2.146	12,447	1.000	12,447
	361	361 Inflow Protectors	1995	1995	Contract 93-6 - Northwest Area Sewers	1,200.00	0	1,200.00	HWW-144	277.5	595.4	2.146	2,575	1.000	2,575
	361	361 18" PVC Sewer Pipe	2001	2001	West Run Interceptor Project	72,568.33	0	72,568.33	HWW-144	327.2	595.4	1.820	132,074	1.000	132,074
	361	361 24" PVC Sewer Pipe	2001	2001	West Run Interceptor Project	123,106.99	0	123,106.99	HWW-144	327.2	595.4	1.820	224,055	1.000	224,055
	361	361 306"PVC Sewer Pipe	2001	2001	West Run Interceptor Project	76,455.92	0	76,455.92	HWW-144	327.2	595.4	1.820	139,150	1.000	139,150
	361	361 Manholes	2001	2001	West Run Interceptor Project	21,600.00	0	21,600.00	HWW-144	327.2	595.4	1.820	39,312	1.000	39,312
	361	361 Northwest Project	2007	2007		500.00	0	500.00	HWW-144	465.8	595.4	1.278	639	1.000	639
	361	361 Sewer line replacement (Hospital)	2013	2013		25,496.32	0	25,496.32	HWW-144	551.7	595.4	1.079	27,511	1.000	27,511
	361	361 Sewer line replacement (Park Ave)	2013	2013		17,224.58	0	17,224.58	HWW-144	551.7	595.4	1.079	18,585	1.000	18,585
	361	361 Sewer line extension (Birch and Elk)	2013	2013		7,974.80	0	7,974.80	HWW-144	551.7	595.4	1.079	8,605	1.000	8,605
	361	361 Sewer Line Shady Point	1998	1998		14,800.55	0	14,800.55	HWW-144	295	595.4	2.018	29,868	1.000	29,868
	361	361 Sewer Line exten	1999	1999		10,503.00	0	10,503.00	HWW-144	299.7	595.4	1.987	20,869	1.000	20,869
	361	361 Holman St -Sanitary Sewer Prj	2002	2002		36,577.50	0	36,577.50	HWW-144	338.8	595.4	1.757	64,267	1.000	64,267
	361	361 Highland Ave. Sewer Line	2003	2003		7,500.00	0	7,500.00	HWW-144	341	595.4	1.746	13,095	1.000	13,095
	361	361 North Fraley Street Project	2009	2009		5,568.41	0	5,568.41	HWW-144	524.3	595.4	1.136	6,326	1.000	6,326
	361	361 Wilson Run Project	2012	2012		28,919.97	0	28,919.97	HWW-144	564.1	595.4	1.055	30,511	1.000	30,511
	361	361 Sewer Manhole	2016	2016		10,819.18	0	10,819.18	HWW-144	567.3	595.4	1.050	11,360	1.000	11,360
	361	361 Collection Sewers - Gravity	SUB-TOTAL =			5,587,425.86		5,587,425.86					17,472,483		17,472,483
363 - Services to Customers														
	363	363 6" PVC Service Sewer	2004	2004	Contract 2003-2 - General/Mechanical Construction	660.00	0	660.00	HWW-139	388.3	674	1.736	1,146	1.000	1,146
	363	363 8" x 6" PVC Wye	2004	2004	Contract 2003-2 - General/Mechanical Construction	25.00	0	25.00	HWW-139	388.3	674	1.736	43	1.000	43
	363	363 Service Connections	1995	1995	Contract 93-1 - West Kane Area Sewer	3,225.00	0	3,225.00	HWW-139	307	674	2.195	7,079	1.000	7,079
	363	363 6" Diameter Service Sewer	1995	1995	Contract 93-1 - West Kane Area Sewer	22,106.50	0	22,106.50	HWW-139	307	674	2.195	48,524	1.000	48,524
	363	363 Sewer Connections	1996	1996	Contract 93-2 - Route 66 Area Sewers	6,600.00	0	6,600.00	HWW-139	321	674	2.100	13,860	1.000	13,860
	363	363 6" Diameter Service Sewer	1996	1996	Contract 93-2 - Route 66 Area Sewers	29,507.00	0	29,507.00	HWW-139	321	674	2.100	61,965	1.000	61,965
	363	363 Service Connections	1996	1996	Contract 93-3 - Westwind Area Sewers	5,700.00	0	5,700.00	HWW-139	321	674	2.100	11,970	1.000	11,970
	363	363 6" Diameter Service Sewer	1996	1996	Contract 93-3 - Westwind Area Sewers	70,965.00	0	70,965.00	HWW-139	321	674	2.100	149,027	1.000	149,027
	363	363 Service Connections	1995	1995	Contract 93-4 - East Kane Sewer	1,925.00	0	1,925.00	HWW-139	307	674	2.195	4,225	1.000	4,225
	363	363 6" Diameter Service Sewer	1995	1995	Contract 93-4 - East Kane Sewer	27,750.00	0	27,750.00	HWW-139	307	674	2.195	60,911	1.000	60,911
	363	363 Sewer Connections	1996	1996	Contract 93-5 - Greendale Area Sewers	4,440.00	0	4,440.00	HWW-139	321	674	2.100	9,324	1.000	9,324
	363	363 6" Diameter Service Sewer	1996	1996	Contract 93-5 - Greendale Area Sewers	36,150.00	0	36,150.00	HWW-139	321	674	2.100	75,915	1.000	75,915
	363	363 Service Connections	1995	1995	Contract 93-6 - Northwest Area Sewers	2,080.00	0	2,080.00	HWW-139	307	674	2.195	4,566	1.000	4,566
	363	363 6" Diameter Service Sewer	1995	1995	Contract 93-6 - Northwest Area Sewers	7,476.00	0	7,476.00	HWW-139	307	674	2.195	16,410	1.000	16,410
	363	363 Services to Customers	SUB-TOTAL =			218,609.50		218,609.50					464,964		464,964
364 - Flow Measuring Devices														
	364	364 Greyline SLT 5.0 Flow Meter - Kinzua	2016	2016	Borough of Kane Original Cost of Inventory/Assets	2,651.02	0	2,651.02	HWW-140	403.3	443	1.098	2,911	1.000	2,911
	364	364 Flowmeters (2)	1996	1996		9,125.00	0	9,125.00	HWW-140	207	443	2.140	19,528	1.000	19,528
	364	364 Flowmeters (2)	1998	1998		9,853.53	0	9,853.53	HWW-140	197	443	2.249	22,161	1.000	22,161
	364	364 3 Pen Chart recorder	2011	2011		3,692.00	0	3,692.00	HWW-140	379	443	1.169	4,316	1.000	4,316
	364	364 Flow Measuring Devices	SUB-TOTAL =			25,321.55		25,321.55					48,915	1.000	48,915
371 - Pumping Equipment														
	371	371 Allegheny Power	0	1995	Allegheny Power	22,044.03	0	22,044.03	HWW-19	442	1261	2.853	62,892	1.000	62,892
	371	371 2 Flanged Check Valve Levers - Rt 66 Pump	2015	2015	Borough of Kane Original Cost of Inventory/Assets	5,078.11	0	5,078.11	HWW-19	945	1261	1.334	6,774	1.000	6,774
	371	371 Pump Rebuild - West Kane Pump Station	2015	2015	Borough of Kane Original Cost of Inventory/Assets	4,135.70	0	4,135.70	HWW-19	945	1261	1.334	5,517	1.000	5,517
	371	371 Rebuilt Pump	2015	2015	Borough of Kane Original Cost of Inventory/Assets	772.23	0	772.23	HWW-19	945	1261	1.334	1,030	1.000	1,030
	371	371 Amp Soft Start - Wilson Run	2015	2015	Borough of Kane Original Cost of Inventory/Assets	3,438.85	0	3,438.85	HWW-19	945	1261	1.334	4,587	1.000	4,587

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Account	Account	Asset Description	Average Year Installed	Average Year Installed		Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
						OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input		Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input		Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Cls (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed		Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
371	371	IntraLink LC150 Lift Components Wilson Run	2016	2016	Borough of Kane Original Cost of Inventory/Assets	7,412.98	0	7,412.98	HWW-19	1017	1261	1.240	9,192	1.000	9,192
371	371	Pump Station	2004	2004	Contract 2003-2 - General/Mechanical Construction	98,500.00	0	98,500.00	HWW-19	572.3	1261	2.203	216,996	1.000	216,996
371	371	Change Order No. 1	1996	1996	Contract 93-7 - Change Orders	(21,000.00)	0	(21,000.00)	HWW-19	450	1261	2.802	(58,842)	1.000	(58,842)
371	371	Change Order No. 2	1996	1996	Contract 93-7 - Change Orders	1,872.00	0	1,872.00	HWW-19	450	1261	2.802	5,245	1.000	5,245
371	371	Change Order No. 3	1996	1996	Contract 93-7 - Change Orders	6,600.00	0	6,600.00	HWW-19	450	1261	2.802	18,493	1.000	18,493
371	371	Change Order No. 4	1996	1996	Contract 93-7 - Change Orders	1,833.00	0	1,833.00	HWW-19	450	1261	2.802	5,136	1.000	5,136
371	371	Change Order No. 5	1996	1996	Contract 93-7 - Change Orders	2,090.40	0	2,090.40	HWW-19	450	1261	2.802	5,857	1.000	5,857
371	371	Mobilization, Bonds, and Ins	1996	1996	Contract 93-7 - East Kane Pump Station	2,000.00	0	2,000.00	HWW-19	450	1261	2.802	5,604	1.000	5,604
371	371	Clear and Grub	1996	1996	Contract 93-7 - East Kane Pump Station	800.00	0	800.00	HWW-19	450	1261	2.802	2,242	1.000	2,242
371	371	Grade and Seed	1996	1996	Contract 93-7 - East Kane Pump Station	1,530.00	0	1,530.00	HWW-19	450	1261	2.802	4,287	1.000	4,287
371	371	Access Road and Parking Area	1996	1996	Contract 93-7 - East Kane Pump Station	3,350.00	0	3,350.00	HWW-19	450	1261	2.802	9,387	1.000	9,387
371	371	Chain Link Fence	1996	1996	Contract 93-7 - East Kane Pump Station	4,400.00	0	4,400.00	HWW-19	450	1261	2.802	12,329	1.000	12,329
371	371	Electrical	1996	1996	Contract 93-7 - East Kane Pump Station	9,656.00	0	9,656.00	HWW-19	450	1261	2.802	27,056	1.000	27,056
371	371	Precast Structures Complete	1996	1996	Contract 93-7 - East Kane Pump Station	29,283.00	0	29,283.00	HWW-19	450	1261	2.802	82,051	1.000	82,051
371	371	Trash Basket	1996	1996	Contract 93-7 - East Kane Pump Station	1,200.00	0	1,200.00	HWW-19	450	1261	2.802	3,362	1.000	3,362
371	371	Sewage Pumps and Controls	1996	1996	Contract 93-7 - East Kane Pump Station	44,985.00	0	44,985.00	HWW-19	450	1261	2.802	126,048	1.000	126,048
371	371	Piping Complete	1996	1996	Contract 93-7 - East Kane Pump Station	13,622.00	0	13,622.00	HWW-19	450	1261	2.802	38,169	1.000	38,169
371	371	Mobilization, Bonds, and Ins	1996	1996	Contract 93-7 - Northwest Pump Station	2,000.00	0	2,000.00	HWW-19	450	1261	2.802	5,604	1.000	5,604
371	371	Clear and Grub	1996	1996	Contract 93-7 - Northwest Pump Station	1,200.00	0	1,200.00	HWW-19	450	1261	2.802	3,362	1.000	3,362
371	371	Grade and Seed	1996	1996	Contract 93-7 - Northwest Pump Station	1,655.00	0	1,655.00	HWW-19	450	1261	2.802	4,637	1.000	4,637
371	371	Access Road and Parking Area	1996	1996	Contract 93-7 - Northwest Pump Station	5,900.00	0	5,900.00	HWW-19	450	1261	2.802	16,532	1.000	16,532
371	371	Chain Link Fence	1996	1996	Contract 93-7 - Northwest Pump Station	4,575.00	0	4,575.00	HWW-19	450	1261	2.802	12,819	1.000	12,819
371	371	Electrical	1996	1996	Contract 93-7 - Northwest Pump Station	9,660.00	0	9,660.00	HWW-19	450	1261	2.802	27,067	1.000	27,067
371	371	Precast Structures Complete	1996	1996	Contract 93-7 - Northwest Pump Station	27,308.00	0	27,308.00	HWW-19	450	1261	2.802	76,517	1.000	76,517
371	371	Trash Basket	1996	1996	Contract 93-7 - Northwest Pump Station	1,200.00	0	1,200.00	HWW-19	450	1261	2.802	3,362	1.000	3,362
371	371	Sewage Pumps and Controls	1996	1996	Contract 93-7 - Northwest Pump Station	45,062.00	0	45,062.00	HWW-19	450	1261	2.802	126,264	1.000	126,264
371	371	Piping Complete	1996	1996	Contract 93-7 - Northwest Pump Station	13,775.00	0	13,775.00	HWW-19	450	1261	2.802	38,598	1.000	38,598
371	371	Mobilization, Bonds, and Ins	1996	1996	Contract 93-7 - Route 66 Pump Station	2,000.00	0	2,000.00	HWW-19	450	1261	2.802	5,604	1.000	5,604
371	371	Clear and Grub	1996	1996	Contract 93-7 - Route 66 Pump Station	1,200.00	0	1,200.00	HWW-19	450	1261	2.802	3,362	1.000	3,362
371	371	Grade and Seed	1996	1996	Contract 93-7 - Route 66 Pump Station	2,390.00	0	2,390.00	HWW-19	450	1261	2.802	6,697	1.000	6,697
371	371	Access Road and Parking Area	1996	1996	Contract 93-7 - Route 66 Pump Station	5,800.00	0	5,800.00	HWW-19	450	1261	2.802	16,252	1.000	16,252
371	371	Chain Link Fence	1996	1996	Contract 93-7 - Route 66 Pump Station	3,750.00	0	3,750.00	HWW-19	450	1261	2.802	10,508	1.000	10,508
371	371	Electrical	1996	1996	Contract 93-7 - Route 66 Pump Station	9,660.00	0	9,660.00	HWW-19	450	1261	2.802	27,067	1.000	27,067
371	371	Precast Structures Complete	1996	1996	Contract 93-7 - Route 66 Pump Station	33,699.00	0	33,699.00	HWW-19	450	1261	2.802	94,425	1.000	94,425
371	371	Comminutor	1996	1996	Contract 93-7 - Route 66 Pump Station	15,686.00	0	15,686.00	HWW-19	450	1261	2.802	43,952	1.000	43,952
371	371	Sewage Pumps and Controls	1996	1996	Contract 93-7 - Route 66 Pump Station	45,002.00	0	45,002.00	HWW-19	450	1261	2.802	126,096	1.000	126,096
371	371	Piping Complete	1996	1996	Contract 93-7 - Route 66 Pump Station	14,180.00	0	14,180.00	HWW-19	450	1261	2.802	39,732	1.000	39,732
371	371	Mobilization, Bonds, and Ins	1996	1996	Contract 93-7 - West Run Pump Station	2,000.00	0	2,000.00	HWW-19	450	1261	2.802	5,604	1.000	5,604
371	371	Clear and Grub	1996	1996	Contract 93-7 - West Run Pump Station	1,200.00	0	1,200.00	HWW-19	450	1261	2.802	3,362	1.000	3,362
371	371	Grade and Seed	1996	1996	Contract 93-7 - West Run Pump Station	2,656.00	0	2,656.00	HWW-19	450	1261	2.802	7,442	1.000	7,442
371	371	Access Road and Parking Area	1996	1996	Contract 93-7 - West Run Pump Station	3,630.00	0	3,630.00	HWW-19	450	1261	2.802	10,171	1.000	10,171
371	371	Chain Link Fence	1996	1996	Contract 93-7 - West Run Pump Station	3,400.00	0	3,400.00	HWW-19	450	1261	2.802	9,527	1.000	9,527
371	371	Electrical	1996	1996	Contract 93-7 - West Run Pump Station	9,740.00	0	9,740.00	HWW-19	450	1261	2.802	27,291	1.000	27,291
371	371	Precast Structures Complete	1996	1996	Contract 93-7 - West Run Pump Station	31,969.00	0	31,969.00	HWW-19	450	1261	2.802	89,577	1.000	89,577
371	371	Trash Basket	1996	1996	Contract 93-7 - West Run Pump Station	1,445.00	0	1,445.00	HWW-19	450	1261	2.802	4,049	1.000	4,049
371	371	Sewage Pumps and Controls	1996	1996	Contract 93-7 - West Run Pump Station	43,160.00	0	43,160.00	HWW-19	450	1261	2.802	120,934	1.000	120,934
371	371	Piping Complete	1996	1996	Contract 93-7 - West Run Pump Station	9,240.00	0	9,240.00	HWW-19	450	1261	2.802	25,890	1.000	25,890
371	371	Mobilization, Bonds, and Ins	1996	1996	Contract 93-7 - Westwind Pump Station	2,000.00	0	2,000.00	HWW-19	450	1261	2.802	5,604	1.000	5,604
371	371	Clear and Grub	1996	1996	Contract 93-7 - Westwind Pump Station	800.00	0	800.00	HWW-19	450	1261	2.802	2,242	1.000	2,242
371	371	Grade and Seed	1996	1996	Contract 93-7 - Westwind Pump Station	1,450.00	0	1,450.00	HWW-19	450	1261	2.802	4,063	1.000	4,063
371	371	Access Road and Parking Area	1996	1996	Contract 93-7 - Westwind Pump Station	2,750.00	0	2,750.00	HWW-19	450	1261	2.802	7,706	1.000	7,706
371	371	Chain Link Fence	1996	1996	Contract 93-7 - Westwind Pump Station	3,575.00	0	3,575.00	HWW-19	450	1261	2.802	10,017	1.000	10,017
371	371	Electrical	1996	1996	Contract 93-7 - Westwind Pump Station	9,660.00	0	9,660.00	HWW-19	450	1261	2.802	27,067	1.000	27,067

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Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Norriton Wastewater Collection Systems Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cobs(10) & (5)	Cost Indices Lookup Cobs(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	371	371 Precast Structures Complete	1996	1996	Contract 93-7 - Westwnd Pump Station	24,060.00	0	24,060.00	HWW-19	450	1261	2.802	67,416	1.000	67,416
	371	371 Trash Basket	1996	1996	Contract 93-7 - Westwnd Pump Station	1,445.00	0	1,445.00	HWW-19	450	1261	2.802	4,049	1.000	4,049
	371	371 Sewage Pumps and Controls	1996	1996	Contract 93-7 - Westwnd Pump Station	44,210.00	0	44,210.00	HWW-19	450	1261	2.802	123,876	1.000	123,876
	371	371 Piping Complete	1996	1996	Contract 93-7 - Westwnd Pump Station	10,285.00	0	10,285.00	HWW-19	450	1261	2.802	28,819	1.000	28,819
	371	371 Mobilization, Bonds, and Ins	1996	1996	Contract 93-7 - Wilson Run Pump Station	2,000.00	0	2,000.00	HWW-19	450	1261	2.802	5,604	1.000	5,604
	371	371 Clear and Grub	1996	1996	Contract 93-7 - Wilson Run Pump Station	1,200.00	0	1,200.00	HWW-19	450	1261	2.802	3,362	1.000	3,362
	371	371 Grade and Seed	1996	1996	Contract 93-7 - Wilson Run Pump Station	3,155.00	0	3,155.00	HWW-19	450	1261	2.802	8,840	1.000	8,840
	371	371 Access Road and Parking Area	1996	1996	Contract 93-7 - Wilson Run Pump Station	4,850.00	0	4,850.00	HWW-19	450	1261	2.802	13,590	1.000	13,590
	371	371 Chain Link Fence	1996	1996	Contract 93-7 - Wilson Run Pump Station	3,400.00	0	3,400.00	HWW-19	450	1261	2.802	9,527	1.000	9,527
	371	371 Electrical	1996	1996	Contract 93-7 - Wilson Run Pump Station	9,792.00	0	9,792.00	HWW-19	450	1261	2.802	27,437	1.000	27,437
	371	371 Precast Structures Complete	1996	1996	Contract 93-7 - Wilson Run Pump Station	29,965.00	0	29,965.00	HWW-19	450	1261	2.802	83,962	1.000	83,962
	371	371 Comminutor	1996	1996	Contract 93-7 - Wilson Run Pump Station	15,686.00	0	15,686.00	HWW-19	450	1261	2.802	43,952	1.000	43,952
	371	371 Sewage Pumps and Controls	1996	1996	Contract 93-7 - Wilson Run Pump Station	44,910.00	0	44,910.00	HWW-19	450	1261	2.802	125,838	1.000	125,838
	371	371 Piping Complete	1996	1996	Contract 93-7 - Wilson Run Pump Station	14,189.00	0	14,189.00	HWW-19	450	1261	2.802	39,758	1.000	39,758
	371	371 Pump Station - Wilson Run (Allied Systems)	2012	2012	0	3,062.68	0	3,062.68	HWW-19	787.5	1261	1.601	4,903	1.000	4,903
	371	371 Upgrade Lift & Rigg (Atlantic Eastern)	2012	2012	0	5,237.61	0	5,237.61	HWW-19	787.5	1261	1.601	8,385	1.000	8,385
	371	371 Check Valves - Wilson Run (Allied Systems)	2013	2013	0	4,401.49	0	4,401.49	HWW-19	836	1261	1.508	6,637	1.000	6,637
	371	371 Sludge Pumps	1997	1997	0	4,452.93	0	4,452.93	HWW-19	473	1261	2.666	11,872	1.000	11,872
	371	371 Trombold Equip	2001	2001	0	26,099.75	0	26,099.75	HWW-19	527.3	1261	2.391	62,405	1.000	62,405
	371	371 Trombold Equipment	2002	2002	0	1,482.56	0	1,482.56	HWW-19	529	1261	2.384	3,534	1.000	3,534
	371	371 Submersible Pump	2004	2004	0	4,200.00	0	4,200.00	HWW-19	572.3	1261	2.203	9,253	1.000	9,253
	371	371 Vertical Turbine Pump	2006	2006	0	11,079.80	0	11,079.80	HWW-19	624.3	1261	2.020	22,381	1.000	22,381
	371	371 ABS pump	2006	2006	0	4,200.00	0	4,200.00	HWW-19	624.3	1261	2.020	8,484	1.000	8,484
	371	371 Wilson Run Pump (Kappe Associates)	2012	2012	0	9,000.00	0	9,000.00	HWW-19	787.5	1261	1.601	14,409	1.000	14,409
	371	371 Control Unit & Interface Module - Wilson Run	2015	2015	0	3,893.50	0	3,893.50	HWW-19	945	1261	1.334	5,194	1.000	5,194
	371	371 Horse Power Pump	2015	2015	0	6,325.00	0	6,325.00	HWW-19	945	1261	1.334	8,438	1.000	8,438
	371	371 Sluice Pump	2015	2015	0	10,200.00	0	10,200.00	HWW-19	945	1261	1.334	13,607	1.000	13,607
	371	371 ABS/Sluzer Pump	2015	2015	0	10,200.00	0	10,200.00	HWW-19	945	1261	1.334	13,607	1.000	13,607
	371	371 Pump Station-Jo Jo Road	2002	2002	0	6,417.89	0	6,417.89	HWW-19	529	1261	2.384	15,300	1.000	15,300
	371	371 Willson Run Pump (Atlantic Eastern)	2012	2012	0	2,281.95	0	2,281.95	HWW-19	787.5	1261	1.601	3,653	1.000	3,653
	371	371 Wilson Run Pump (Kane Lawn & Garden)	2012	2012	0	2,138.60	0	2,138.60	HWW-19	787.5	1261	1.601	3,424	1.000	3,424
	371	371 **Pumping Equipment**	SUB-TOTAL =			941,601.06		941,601.06					2,443,933		2,443,933
380 - Treatment and Disposal Equipment															
	380	380 Pine St WWTP	1968	1968	1967 Project	116,413.00	at each plant, of which 4 remain or were repurposed. Percent of original value remaining is 57%. Residual is then 57% of $203,723	116,413.00	HWW-117	70	960	13.714	1,596,488	1.000	1,596,488
	380	380 Kinzua Rd. WWTP		1968	1968 Project	116,413.00	at each plant, of which 4 remain or were repurposed. Percent of original value remaining is 57%. Residual is then 57% of $203,724	116,413.00	HWW-117	70	960	13.714	1,596,488	1.000	1,596,488
	380	380 Membrane Disc	2003	2003	Borough of Kane Original Cost of Inventory/Assets	4,517.00	0	4,517.00	HWW-117	460	960	2.087	9,427	1.000	9,427
	380	380 Submersible Pump		2004	Borough of Kane Original Cost of Inventory/Assets	2,700.00	0	2,700.00	HWW-117	480	960	2.000	5,400	1.000	5,400
	380	380 Membrane Discs		2004	Borough of Kane Original Cost of Inventory/Assets	3,600.00	0	3,600.00	HWW-117	480	960	2.000	7,200	1.000	7,200
	380	380 Transducer Unit		2009	Borough of Kane Original Cost of Inventory/Assets	5,084.75	0	5,084.75	HWW-117	672.5	960	1.428	7,261	1.000	7,261
	380	380 Fiberglass Specialties (weir plates/scum baffles) (Chlorine Contact	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,100.00	0	1,100.00	HWW-117	366	960	2.623	2,885	1.000	2,885
	380	380 Install Temp Chlorine Contact Tank (Existing Digester Tank)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	6,000.00	0	6,000.00	HWW-117	366	960	2.623	15,738	1.000	15,738

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $'s					RCN $'s	COR $'s / RCN $'s	COR $'s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	Last Nutmeg Wastewater Collection System's Engineer's Assessment (Eng. Assmnt)	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cost(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
380	380	Remove Clarifier Equipment	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,960.00	0	1,960.00	HWW-117	366	960	2.623	5,141	1.000	5,141
380	380	Remove Floating Cover, Heat Exchanger, Sludge Recirc. Pumps, C	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	8,167.00	0	8,167.00	HWW-117	366	960	2.623	21,422	1.000	21,422
380	380	Remove Pumps, Heat Exchanger, Boiler Equip. from Control Buildin	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	980.00	0	980.00	HWW-117	366	960	2.623	2,571	1.000	2,571
380	380	Remove Primary Clarifier Equip	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,634.00	0	1,634.00	HWW-117	366	960	2.623	4,286	1.000	4,286
380	380	Remove Trickling Filter Equip	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,960.00	0	1,960.00	HWW-117	366	960	2.623	5,141	1.000	5,141
380	380	Remove Chlorine Contact Equip	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,138.00	0	4,138.00	HWW-117	366	960	2.623	10,854	1.000	10,854
380	380	Mech. Cleaned Bar Screen	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	42,250.00	0	42,250.00	HWW-117	366	960	2.623	110,822	1.000	110,822
380	380	Circ. Grit Removal Unit	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	67,180.00	0	67,180.00	HWW-117	366	960	2.623	176,213	1.000	176,213
380	380	Sequential Batch Reactors	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	554,245.00	0	554,245.00	HWW-117	366	960	2.623	1,453,785	1.000	1,453,785
380	380	Positive Displacement Pumps	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	27,750.00	0	27,750.00	HWW-117	366	960	2.623	72,788	1.000	72,788
380	380	Vert. Lineshaft Cent. Pumps	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	35,300.00	0	35,300.00	HWW-117	366	960	2.623	92,592	1.000	92,592
380	380	Submersible Pumps	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	15,600.00	0	15,600.00	HWW-117	366	960	2.623	40,919	1.000	40,919
380	380	Grinder Pumps	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	8,550.00	0	8,550.00	HWW-117	366	960	2.623	22,427	1.000	22,427
380	380	Positive Displacement Blwers	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	34,800.00	0	34,800.00	HWW-117	366	960	2.623	91,280	1.000	91,280
380	380	Air Diffuser System	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	30,235.00	0	30,235.00	HWW-117	366	960	2.623	79,306	1.000	79,306
380	380	Chlorine System	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	12,200.00	0	12,200.00	HWW-117	366	960	2.623	32,001	1.000	32,001
380	380	Sampler	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,670.00	0	4,670.00	HWW-117	366	960	2.623	12,249	1.000	12,249
380	380	Sluice Gates	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	14,460.00	0	14,460.00	HWW-117	366	960	2.623	37,929	1.000	37,929
380	380	Air Flor Monitoring Equip	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	12,400.00	0	12,400.00	HWW-117	366	960	2.623	32,525	1.000	32,525
380	380	Panel PP3	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-117	366	960	2.623	6,558	1.000	6,558
380	380	Panel PP1	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-117	366	960	2.623	6,558	1.000	6,558
380	380	Panel PP2	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	2,500.00	0	2,500.00	HWW-117	366	960	2.623	6,558	1.000	6,558
380	380	Effluent Water Pump Control Pl	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	15,000.00	0	15,000.00	HWW-117	366	960	2.623	39,345	1.000	39,345
380	380	Blower Panel	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	4,000.00	0	4,000.00	HWW-117	366	960	2.623	10,492	1.000	10,492
380	380	Telephone Dialer PL	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	3,696.00	0	3,696.00	HWW-117	366	960	2.623	9,695	1.000	9,695
380	380	Chart Recorder	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	3,000.00	0	3,000.00	HWW-117	366	960	2.623	7,869	1.000	7,869
380	380	Magnetic Flowmeter	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	12,000.00	0	12,000.00	HWW-117	366	960	2.623	31,476	1.000	31,476
380	380	Ultrasonic Flowmeter	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	4,000.00	0	4,000.00	HWW-117	366	960	2.623	10,492	1.000	10,492
380	380	PH Sensor	1995-96	1995	Contract 2-92 - Pine Street WWTP (Electrical)	4,000.00	0	4,000.00	HWW-117	366	960	2.623	10,492	1.000	10,492
380	380	Fiberglass Weirs & Baffles (Chlorine Contact Tank)	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	4,000.00	0	4,000.00	HWW-117	366	960	2.623	10,492	1.000	10,492
380	380	Mechanical Bar Screen Mat	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	37,700.00	0	37,700.00	HWW-117	366	960	2.623	98,887	1.000	98,887

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
380	380	Mechanical Bar Screen Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	6,700.00	0	6,700.00	HWW-117	366	960	2.623	17,574	1.000	17,574
380	380	Circ. Grit Removal Unit Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	59,205.00	0	59,205.00	HWW-117	366	960	2.623	155,295	1.000	155,295
380	380	Circ. Grit Removal Unit Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	13,995.00	0	13,995.00	HWW-117	366	960	2.623	36,709	1.000	36,709
380	380	Septage Acceptance Unit - Mat	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	63,949.00	0	63,949.00	HWW-117	366	960	2.623	167,738	1.000	167,738
380	380	Septage Acceptance Unit - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	10,251.00	0	10,251.00	HWW-117	366	960	2.623	26,888	1.000	26,888
380	380	Sequential Batch Reactor - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	492,958.00	0	492,958.00	HWW-117	366	960	2.623	1,293,029	1.000	1,293,029
380	380	Sequential Batch Reactor - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	89,000.00	0	89,000.00	HWW-117	366	960	2.623	233,447	1.000	233,447
380	380	Positive Displacement Pump-Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	73,125.00	0	73,125.00	HWW-117	366	960	2.623	191,807	1.000	191,807
380	380	Positive Displacement Pump-Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	12,375.00	0	12,375.00	HWW-117	366	960	2.623	32,460	1.000	32,460
380	380	Vert. Lineshaft Center Pumps - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	30,200.00	0	30,200.00	HWW-117	366	960	2.623	79,215	1.000	79,215
380	380	Vert. Lineshaft Center Pumps - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,800.00	0	5,800.00	HWW-117	366	960	2.623	15,213	1.000	15,213
380	380	Submersible Pump - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	21,824.00	0	21,824.00	HWW-117	366	960	2.623	57,244	1.000	57,244
380	380	Submersible Pump - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,376.00	0	5,376.00	HWW-117	366	960	2.623	14,101	1.000	14,101
380	380	Grinder Pumps - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	7,055.00	0	7,055.00	HWW-117	366	960	2.623	18,505	1.000	18,505
380	380	Grinder Pumps - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,245.00	0	4,245.00	HWW-117	366	960	2.623	11,135	1.000	11,135
380	380	Belt Filter Press - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	162,717.00	0	162,717.00	HWW-117	366	960	2.623	426,807	1.000	426,807
380	380	Belt Filter Press - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	25,083.00	0	25,083.00	HWW-117	366	960	2.623	65,793	1.000	65,793
380	380	Belt Conveyors - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	23,719.00	0	23,719.00	HWW-117	366	960	2.623	62,215	1.000	62,215
380	380	Belt Conveyors - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	5,981.00	0	5,981.00	HWW-117	366	960	2.623	15,688	1.000	15,688
380	380	Positive Displacement Blower - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	36,040.00	0	36,040.00	HWW-117	366	960	2.623	94,533	1.000	94,533
380	380	Positive Displacement Blower - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	6,460.00	0	6,460.00	HWW-117	366	960	2.623	16,945	1.000	16,945
380	380	Chemical Dry Feeders - mat	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	12,500.00	0	12,500.00	HWW-117	366	960	2.623	32,788	1.000	32,788
380	380	Chemical Dry Feeders - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	2,500.00	0	2,500.00	HWW-117	366	960	2.623	6,558	1.000	6,558
380	380	Air Diffusers System - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	23,000.00	0	23,000.00	HWW-117	366	960	2.623	60,329	1.000	60,329
380	380	Air Diffusers System - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	13,800.00	0	13,800.00	HWW-117	366	960	2.623	36,197	1.000	36,197
380	380	Polymer Feed System - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	15,200.00	0	15,200.00	HWW-117	366	960	2.623	39,870	1.000	39,870
380	380	Polymer Feed System - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,800.00	0	3,800.00	HWW-117	366	960	2.623	9,967	1.000	9,967
380	380	Chlorination System - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	19,563.00	0	19,563.00	HWW-117	366	960	2.623	51,314	1.000	51,314
380	380	Chlorination System - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	4,837.00	0	4,837.00	HWW-117	366	960	2.623	12,687	1.000	12,687
380	380	Samplers - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	3,750.00	0	3,750.00	HWW-117	366	960	2.623	9,836	1.000	9,836
380	380	Samplers - Install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant	General/Mechanical	750.00	0	750.00	HWW-117	366	960	2.623	1,967	1.000	1,967

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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	380	380 Sluice Gates - Mat.	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	11,900.00	0	11,900.00	HWW-117	366	960	2.623	31,214	1.000	31,214
	380	380 Sluice Gates - install	1995-96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	1,900.00	0	1,900.00	HWW-117	366	960	2.623	4,984	1.000	4,984
	380	380 Panel PP1	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-117	366	960	2.623	6,558	1.000	6,558
	380	380 Panel PP2	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-117	366	960	2.623	6,558	1.000	6,558
	380	380 Panel PP3	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,500.00	0	2,500.00	HWW-117	366	960	2.623	6,558	1.000	6,558
	380	380 Effluent Water Pump Control PL	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	10,000.00	0	10,000.00	HWW-117	366	960	2.623	26,230	1.000	26,230
	380	380 Blower Control PL	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	4,000.00	0	4,000.00	HWW-117	366	960	2.623	10,492	1.000	10,492
	380	380 Line Water Control Panel	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	2,000.00	0	2,000.00	HWW-117	366	960	2.623	5,246	1.000	5,246
	380	380 WAS Remote Panel	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	3,000.00	0	3,000.00	HWW-117	366	960	2.623	7,869	1.000	7,869
	380	380 Telephone Dialer	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	3,000.00	0	3,000.00	HWW-117	366	960	2.623	7,869	1.000	7,869
	380	380 Chart Recorder	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	3,000.00	0	3,000.00	HWW-117	366	960	2.623	7,869	1.000	7,869
	380	380 Magnetic Flowmeter	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	9,000.00	0	9,000.00	HWW-117	366	960	2.623	23,607	1.000	23,607
	380	380 Ultrasonic Flowmeter	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	4,000.00	0	4,000.00	HWW-117	366	960	2.623	10,492	1.000	10,492
	380	380 PH Sensor	1995-96	1995	Contract 5-92 - Kinzua Wastewater Treatment Plant (Electrical)	3,000.00	0	3,000.00	HWW-117	366	960	2.623	7,869	1.000	7,869
	380	380 Hand Scanner	1995	1995		0	186.00	0	186.00	HWW-117	366	960	2.623	488	1.000	488
	380	380 Vacuum Truck	1995	1995		0	146,700.00	0	146,700.00	HWW-117	366	960	2.623	384,794	1.000	384,794
	380	380 Air Smoke Machine	1999	1999		0	1,809.07	0	1,809.07	HWW-117	410	960	2.341	4,235	1.000	4,235
	380	380 BNR Inc	2001	2001		0	39,180.00	0	39,180.00	HWW-117	438.8	960	2.188	85,726	1.000	85,726
	380	380 U S. Filter	2002	2002		0	69,580.00	0	69,580.00	HWW-117	452	960	2.124	147,788	1.000	147,788
	380	380 Grit Concentrator	2013	2013		0	4,247.00	0	4,247.00	HWW-117	780.5	960	1.230	5,224	1.000	5,224
	380	380 (2) Gas Chlorinators	2014	2014		0	5,383.67	0	5,383.67	HWW-117	814.5	960	1.179	6,347	1.000	6,347
	380	380 Actuator	2016	2016		0	4,322.78	0	4,322.78	HWW-117	867.5	960	1.107	4,785	1.000	4,785
	380	380 Pitsa Grit 250GPM Concentrator	2016	2016		0	4,247.00	0	4,247.00	HWW-117	867.5	960	1.107	4,701	1.000	4,701
	380	380 Actuator	2017	2017		0	4,574.00	0	4,574.00	HWW-117	896.5	960	1.071	4,899	1.000	4,899
	380	380 Controller	2017	2017		0	2,357.10	0	2,357.10	HWW-117	896.5	960	1.071	2,524	1.000	2,524
	380	380 Pine Street Plant (Allied Systems)	2015	2015		0	54,465.52	0	54,465.52	HWW-117	843.3	960	1.138	61,982	1.000	61,982
	380	380 Pine Street Plant (SE Dyne)	2015	2015	Replace air lines to SBRs (4)	0	1,806.88	0	1,806.88	HWW-117	843.3	960	1.138	2,056	1.000	2,056
	380	380 Pine Street Plant (SE Dyne)	2015	2015	Replace air lines to SBRs (4)	0	12,945.00	0	12,945.00	HWW-117	843.3	960	1.138	14,731	1.000	14,731
	380	380 Pine Street Plant (SE Dyne)	2015	2015	Replace air lines to SBRs (4)	0	446.66	0	446.66	HWW-117	843.3	960	1.138	508	1.000	508
	380	380 WWTP Dechlor Proj	2002	2002		0	17,723.35	0	17,723.35	HWW-117	452	960	2.124	37,644	1.000	37,644
	380	380 8" valve - Pine St. Plant	2004	2004		0	3,332.72	0	3,332.72	HWW-117	480	960	2.000	6,665	1.000	6,665
	380	380 Air Line Project	2012	2012	Replace air lines to SBRs (4)	0	55,294.49	0	55,294.49	HWW-117	753	960	1.275	70,500	1.000	70,500
	380	380 Actuator & Interface Cards	2016	2016		0	13,324.25	0	13,324.25	HWW-117	867.5	960	1.107	14,750	1.000	14,750
	380	380 Root Blower (Pine St WWTP)	2018	2018		0	8,500.00	0	8,500.00	HWW-117	932.8	960	1.029	8,747	1.000	8,747
	380	380 Area Velocity Analyzer and Logger (Pine St WWTP)	2018	2018		0	4,172.92	0	4,172.92	HWW-117	932.8	960	1.029	4,294	1.000	4,294
	380	380 Area Velocity Probe and Appurtenances (Pine St WWTP)	2018	2018		0	1,729.51	0	1,729.51	HWW-117	932.8	960	1.029	1,780	1.000	1,780
	380	380 Wastewater and Disposal Equipment	SUB-TOTAL =				3,003,588.67		3,003,588.67					10,126,486		10,126,486
381 Plant Sewers															
	381	381 Lever & Weight Swing Check Valve - Kinzua	2016	2016	Borough of Kane Original Cost of Inventory/Assets	3,779.83	0	3,779.83	HWW-117	867.5	960	1.107	4,184	1.000	4,184
	381	381 Manholes/Vaults	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	28,600.00	0	28,600.00	HWW-117	366	960	2.623	75,018	1.000	75,018

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
381	381	Manholes	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	24,750.00	0	24,750.00	HWW-117	366	960	2.623	64,919	1.000	64,919
381	381	Gas Piping	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,000.00	0	4,000.00	HWW-117	366	960	2.623	10,492	1.000	10,492
381	381	Wall Sleeves	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	23,625.00	0	23,625.00	HWW-117	366	960	2.623	61,968	1.000	61,968
381	381	1/2" PVC Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	280.00	0	280.00	HWW-117	366	960	2.623	734	1.000	734
381	381	1" PVC Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	360.00	0	360.00	HWW-117	366	960	2.623	944	1.000	944
381	381	1 1/2" PVC Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,080.00	0	3,080.00	HWW-117	366	960	2.623	8,079	1.000	8,079
381	381	2" PVC Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,800.00	0	2,800.00	HWW-117	366	960	2.623	7,344	1.000	7,344
381	381	3" PVC Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	480.00	0	480.00	HWW-117	366	960	2.623	1,259	1.000	1,259
381	381	6" PVC Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	11,500.00	0	11,500.00	HWW-117	366	960	2.623	30,165	1.000	30,165
381	381	24" PVC Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	10,400.00	0	10,400.00	HWW-117	366	960	2.623	27,279	1.000	27,279
381	381	6" DI Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	80,000.00	0	80,000.00	HWW-117	366	960	2.623	209,840	1.000	209,840
381	381	8" DI Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	8,580.00	0	8,580.00	HWW-117	366	960	2.623	22,505	1.000	22,505
381	381	14" DI Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	880.00	0	880.00	HWW-117	366	960	2.623	2,308	1.000	2,308
381	381	16" DI Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	6,120.00	0	6,120.00	HWW-117	366	960	2.623	16,053	1.000	16,053
381	381	24" DI Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	69,120.00	0	69,120.00	HWW-117	366	960	2.623	181,302	1.000	181,302
381	381	3" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	310.00	0	310.00	HWW-117	366	960	2.623	813	1.000	813
381	381	4" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,375.00	0	5,375.00	HWW-117	366	960	2.623	14,099	1.000	14,099
381	381	6" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	19,890.00	0	19,890.00	HWW-117	366	960	2.623	52,171	1.000	52,171
381	381	8" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	275.00	0	275.00	HWW-117	366	960	2.623	721	1.000	721
381	381	12" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	134.00	0	134.00	HWW-117	366	960	2.623	351	1.000	351
381	381	14" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	29,750.00	0	29,750.00	HWW-117	366	960	2.623	78,034	1.000	78,034
381	381	16" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,320.00	0	5,320.00	HWW-117	366	960	2.623	13,954	1.000	13,954
381	381	24" DI Process Pipe & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,900.00	0	4,900.00	HWW-117	366	960	2.623	12,853	1.000	12,853
381	381	1/2" Copper Tube & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	300.00	0	300.00	HWW-117	366	960	2.623	787	1.000	787
381	381	3/4" Copper Tube & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	6,080.00	0	6,080.00	HWW-117	366	960	2.623	15,948	1.000	15,948
381	381	1" Copper Tube & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,520.00	0	1,520.00	HWW-117	366	960	2.623	3,987	1.000	3,987
381	381	2" Copper Tube & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,800.00	0	4,800.00	HWW-117	366	960	2.623	12,590	1.000	12,590
381	381	2 1/2" Copper Tube & Ftgs	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	11,160.00	0	11,160.00	HWW-117	366	960	2.623	29,273	1.000	29,273
381	381	1/2" Valves	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	182.00	0	182.00	HWW-117	366	960	2.623	477	1.000	477
381	381	3/4" Valves	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,350.00	0	1,350.00	HWW-117	366	960	2.623	3,541	1.000	3,541
381	381	1" Valves	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	475.00	0	475.00	HWW-117	366	960	2.623	1,246	1.000	1,246

Pennsylvania American Water Company
Borough of Kane Authority
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Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	381	381 2" Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	573.00	0	573.00	HWW-117	366	960	2.623	1,503	1.000	1,503
	381	381 3" Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	460.00	0	460.00	HWW-117	366	960	2.623	1,207	1.000	1,207
	381	381 4" Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	25,545.00	0	25,545.00	HWW-117	366	960	2.623	67,005	1.000	67,005
	381	381 6" Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	57,330.00	0	57,330.00	HWW-117	366	960	2.623	150,377	1.000	150,377
	381	381 8" Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,323.00	0	3,323.00	HWW-117	366	960	2.623	8,716	1.000	8,716
	381	381 16" Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	6,400.00	0	6,400.00	HWW-117	366	960	2.623	16,787	1.000	16,787
	381	381 24" Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	59,150.00	0	59,150.00	HWW-117	366	960	2.623	155,150	1.000	155,150
	381	381 Valves Boxes	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,580.00	0	5,580.00	HWW-117	366	960	2.623	14,636	1.000	14,636
	381	381 Mud Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,970.00	0	1,970.00	HWW-117	366	960	2.623	5,167	1.000	5,167
	381	381 Yard Hydrants	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	9,405.00	0	9,405.00	HWW-117	366	960	2.623	24,669	1.000	24,669
	381	381 Hose Reels	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	5,670.00	0	5,670.00	HWW-117	366	960	2.623	14,872	1.000	14,872
	381	381 Relief Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,000.00	0	3,000.00	HWW-117	366	960	2.623	7,869	1.000	7,869
	381	381 Telescopic Valves	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	3,850.00	0	3,850.00	HWW-117	366	960	2.623	10,099	1.000	10,099
	381	381 Stop Gates	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	4,200.00	0	4,200.00	HWW-117	366	960	2.623	11,017	1.000	11,017
	381	381 Gauges	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,122.00	0	1,122.00	HWW-117	366	960	2.623	2,943	1.000	2,943
	381	381 Backflow Preventers	1995.96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	2,760.00	0	2,760.00	HWW-117	366	960	2.623	7,239	1.000	7,239
	381	381 Interior Process Piping - Mat	1995.96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	37,500.00	0	37,500.00	HWW-117	366	960	2.623	98,363	1.000	98,363
	381	381 Interior Process Piping - Install	1995.96	1995	Contract 4-92 - Kinzua Wastewater Treatment Plant General/Mechanical	12,500.00	0	12,500.00	HWW-117	366	960	2.623	32,788	1.000	32,788
	381	381 CSO Modification	1999	1999		0	11,996.14	0	11,996.14	HWW-117	410	960	2.341	28,083	1.000	28,083
	381	381 Pine St - Combined Sewer Overflow	2003	2003		0	418,386.64	0	418,386.64	HWW-117	460	960	2.087	873,173	1.000	873,173
	381	381 WWTP slipstream	2002	2002		0	18,769.10	0	18,769.10	HWW-117	452	960	2.124	39,866	1.000	39,866
	381	381 CSO Bypass - Weir Install	2004	2004		0	33,243.90	0	33,243.90	HWW-117	480	960	2.000	66,488	1.000	66,488
	381	381 CSO Bypass - Weir Install	2004	2004		0	600.00	0	600.00	HWW-117	480	960	2.000	1,200	1.000	1,200
	381	381 Treatment Plant Sewers	SUB-TOTAL =				1,093,509.61		1,093,509.61					2,604,457		2,604,457
389 - Other Plant and Misc Equipment															
	389	389 2 Control Panels	2003	2003		0	580.00	0	580.00	HWW-117	460	960	2.087	1,210	1.000	1,210
	389	389 Other Plant and Misc Equipment	SUB-TOTAL =				580.00		580.00					1,210		1,210
390 - Office Furniture and Equipment															
	390	390 Safety Can Cabinet - 45 Gallon	2016	2016	Borough of Kane Original Cost of Inventory/Assets	2,141.90	0	2,141.90	AUST-115	285.2	295.8	1.037	2,221	1.000	2,221
	390	390 Computer	1992	1992		0	1,720.71	0	1,720.71	AUST-115	211.2	295.8	1.401	2,411	1.000	2,411
	390	390 Billing Package	1993	1993		0	1,200.00	0	1,200.00	AUST-115	212.6	295.8	1.391	1,669	1.000	1,669
	390	390 Kane Borough	2012	2012	Reimburse 1/2 copier cost	0	400.00	0	400.00	AUST-115	278.6	295.8	1.062	425	1.000	425
	390	390 Computer	2003	2003		0	6,666.16	0	6,666.16	AUST-115	232.6	295.8	1.272	8,479	1.000	8,479
	390	390 Printer	2003	2003		0	491.35	0	491.35	AUST-115	232.6	295.8	1.272	625	1.000	625
	390	390 Billing Software	2003	2003		0	5,000.00	0	5,000.00	AUST-115	232.6	295.8	1.272	6,360	1.000	6,360
	390	390 Computer Equip	2003	2003		0	1,628.11	0	1,628.11	AUST-115	232.6	295.8	1.272	2,071	1.000	2,071
	390	390 Delinquent Billing Software	2005	2005		0	3,000.00	0	3,000.00	AUST-115	244.4	295.8	1.210	3,630	1.000	3,630
	390	390 Crystal Reports Software	2004	2004		0	205.00	0	205.00	AUST-115	236	295.8	1.253	257	1.000	257
	390	390 Plant software	2011	2011		0	6,887.33	0	6,887.33	AUST-115	274.2	295.8	1.079	7,431	1.000	7,431
	390	390 Software & Computer (Integrated Controls)	2012	2012		0	5,301.79	0	5,301.79	AUST-115	278.6	295.8	1.062	5,631	1.000	5,631

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	AUS Input	Last Nemitsh Wastewater Collection System's Engineer's Assessment (Eng. Asmnt)	Eng Assmt	AUS Input				Eng Assmt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	390	390 Office Furniture and Equipment	SUB-TOTAL =			34,642.35		34,642.35					41,210	1.000	41,210
391 - Transportation Equipment															
	391	391 1996 Ford F150 - Zook	1995	1995	Borough of Kane Original Cost of Inventory/Assets	20,538.60	0	20,538.60	AUST-14	270	305	1.130	23,209	1.000	23,209
	391	391 2016 Ford F350	2016	2016		31,688.72	0	31,688.72	AUST-14	298	305	1.023	32,418	1.000	32,418
	391	391 Transportation Equipment	SUB-TOTAL =			52,227.32		52,227.32					55,626		55,626
392 - Stores Equipment															
	392	392 Crane, Rear Bumber, & Aluminum Bed	2017	2017		10,000.00	0	10,000.00	AUST-17	519	549	1.058	10,580	1.000	10,580
	392	392 Stores Equipment	SUB-TOTAL =			10,000.00		10,000.00					10,580		10,580
393 - Tools, Shop, and Garage Equipment															
	393	393 Trash Pumps	1998	1998	Borough of Kane Original Cost of Inventory/Assets	5,787.90	0	5,787.90	AUST-17	364	549	1.508	8,728	1.000	8,728
	393	393 Electric Motor	1999	1999	Borough of Kane Original Cost of Inventory/Assets	3,377.85	0	3,377.85	AUST-17	368	549	1.492	5,040	1.000	5,040
	393	393 Electric Pump	1999	1999	Borough of Kane Original Cost of Inventory/Assets	3,966.61	0	3,966.61	AUST-17	368	549	1.492	5,918	1.000	5,918
	393	393 Glass Washing Machine	1999	1999	Borough of Kane Original Cost of Inventory/Assets	4,555.20	0	4,555.20	AUST-17	368	549	1.492	6,796	1.000	6,796
	393	393 Rebuilt Pump	2002	2002	Borough of Kane Original Cost of Inventory/Assets	4,970.00	0	4,970.00	AUST-17	376	549	1.460	7,256	1.000	7,256
	393	393 Rebuilt Pump	2002	2002	Borough of Kane Original Cost of Inventory/Assets	2,514.74	0	2,514.74	AUST-17	376	549	1.460	3,672	1.000	3,672
	393	393 Pump	2003	2003	Borough of Kane Original Cost of Inventory/Assets	2,756.87	0	2,756.87	AUST-17	378	549	1.452	4,003	1.000	4,003
	393	393 Pump	2003	2003	Borough of Kane Original Cost of Inventory/Assets	2,756.87	0	2,756.87	AUST-17	378	549	1.452	4,003	1.000	4,003
	393	393 Boiler	2006	2006	Borough of Kane Original Cost of Inventory/Assets	7,783.00	0	7,783.00	AUST-17	416	549	1.320	10,274	1.000	10,274
	393	393 Boiler - Pine St Treatment Plant	2009	2009	Borough of Kane Original Cost of Inventory/Assets	5,497.00	0	5,497.00	AUST-17	457	549	1.201	6,602	1.000	6,602
	393	393 Rebuild Pump	2015	2015	Borough of Kane Original Cost of Inventory/Assets	4,990.00	0	4,990.00	AUST-17	509	549	1.079	5,384	1.000	5,384
	393	393 Pump - East Kane Pond Lift Station	2015	2015	Borough of Kane Original Cost of Inventory/Assets	4,739.23	0	4,739.23	AUST-17	509	549	1.079	5,114	1.000	5,114
	393	393 Electric Actuator	2015	2015	Borough of Kane Original Cost of Inventory/Assets	4,398.09	0	4,398.09	AUST-17	509	549	1.079	4,746	1.000	4,746
	393	393 2 Sensors	2015	2015	Borough of Kane Original Cost of Inventory/Assets	2,191.00	0	2,191.00	AUST-17	509	549	1.079	2,364	1.000	2,364
	393	393 2 Sensors	2015	2015	Borough of Kane Original Cost of Inventory/Assets	1,995.00	0	1,995.00	AUST-17	509	549	1.079	2,153	1.000	2,153
	393	393 LMI Chemical Feed Pump	2016	2016	Borough of Kane Original Cost of Inventory/Assets	1,082.66	0	1,082.66	AUST-17	513	549	1.070	1,158	1.000	1,158
	393	393 Volute Aqua CI CW 4"	2016	2016		3,131.77	0	3,131.77	AUST-17	513	549	1.070	3,351	1.000	3,351
	393	393 Hydrant Meter	2004	2004		894.10	0	894.10	AUST-17	387	549	1.419	1,269	1.000	1,269
	393	393 Circuit Board	2004	2004		621.45	0	621.45	AUST-17	387	549	1.419	882	1.000	882
	393	393 Trinity Boiler - Kinzua Plant (Allied)	2013	2013		6,242.00	0	6,242.00	AUST-17	494	549	1.111	6,935	1.000	6,935
	393	393 ABS Pump	2016	2016		3,400.00	0	3,400.00	AUST-17	513	549	1.070	3,638	1.000	3,638
	393	393 Actuator	2016	2016		4,322.61	0	4,322.61	AUST-17	513	549	1.070	4,625	1.000	4,625
	393	393 Tools, Shop, and Garage Equipment	SUB-TOTAL =			81,973.95		81,973.95					103,910		103,910
394 - Laboratory Equipment															
	394	394 Ion Meters - Fisher (2)	1995	1995	Borough of Kane Original Cost of Inventory/Assets	2,319.38	0	2,319.38	AUST-17	345	549	1.591	3,690	1.000	3,690
	394	394 Rain Gauge	2003	2003		3,481.01	0	3,481.01	AUST-17	378	549	1.452	5,054	1.000	5,054
	394	394 Mechanical Oven	2003	2003		1,229.40	0	1,229.40	AUST-17	378	549	1.452	1,785	1.000	1,785
	394	394 Laboratory Equipment	SUB-TOTAL =			7,029.79		7,029.79					10,530		10,530
395 - Power Operated Equipment															
	395	395 Plow for Pickup Truck	2014	2014	Borough of Kane Original Cost of Inventory/Assets	4,065.00	0	4,065.00	AUST-18	307	335	1.091	4,435	1.000	4,435
	395	395 Power Operated Equipment	SUB-TOTAL =			4,065.00		4,065.00					4,435		4,435

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2018

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)				(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed				Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmt	Aus Input	East Norriton Wastewater Collection System's Engineer's Assessment (Eng. Assmt)	Eng Assmt	Aus Input				Eng Assmt	Aus Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	Aus Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed				Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
396 Communication Equipment															
	396	396 50 XM 1000 Converter	2016	2016	Borough of Kane Original Cost of Inventory/Assets	1,955.01	0	1,955.01	USBLS2	96	93.1	0.970	1,896	1.000	1,896
	396	396 Cellular Alarm Communicator	2016	2016	Borough of Kane Original Cost of Inventory/Assets	2,642.00	0	2,642.00	USBLS2	96	93.1	0.970	2,563	1.000	2,563
	396	396 Network Cables & Parts	2003	2003	0	640.00	0	640.00	USBLS2	102	93.1	0.913	584	1.000	584
	396	396 Network Cable installation	2003	2003	0	210.00	0	210.00	USBLS2	102	93.1	0.913	192	1.000	192
	396	396 Pagers	1996	1996	0	931.65	0	931.65	USBLS2	115	93.1	0.810	755	1.000	755
	396	396 Communications System	2011	2011	0	3,996.95	0	3,996.95	USBLS2	96	93.1	0.970	3,877	1.000	3,877
	396	396 Communications Equipment	SUB-TOTAL =			10,375.61		10,375.61					9,867		9,867
397 - Miscellaneous Equipment															
	397	397 Sink and Table	1998	1998	Borough of Kane Original Cost of Inventory/Assets	1,305.00	0	1,305.00	AUST-18	262	335	1.279	1,669	1.000	1,669
	397	397 Specialties (signs, fire extinguishers)	1995-96	1995	Contract 1-92 - Pine Street WWTP (General/Mechanical)	1,599.00	0	1,599.00	AUST-18	254	335	1.319	2,109	1.000	2,109
	397	397 3 Infrared Heaters & Installation	2004	2004	0	4,051.60	0	4,051.60	AUST-18	275	335	1.218	4,935	1.000	4,935
	397	397 Miscellaneous Equipment	SUB-TOTAL =			6,955.60		6,955.60					8,713		8,713
			GRAND-TOTAL =			21,023,527.36		21,023,527.36					55,539,558.15		55,539,558.15
EXCLUDED ASSETS:															
	371	371 Galah On Lot 537	2001	2001	0	52,571.06	Installation of 9 grinder pumps	52,571.06	HWW-19	527.3	1261	2.391	125,697	1.000	125,697
	371	371 Grinder pumps (Tromboid)	1996	1996	Contract 93-8 - Grinder Pumps	124,216.00	Grinder Pumps	124,216.00	HWW-19	450	1261	2.802	348,053	1.000	348,053
	371	371 Grinder Pumps - 5	2003	2003	0	16,900.00	Grinder Pumps	16,900.00	HWW-19	543.3	1261	2.321	39,225	1.000	39,225
	371	371 Grinder Pumps - 2	2003	2003	0	6,960.00	Grinder Pumps	6,960.00	HWW-19	543.3	1261	2.321	16,154	1.000	16,154
	395	395 Beckwith Loader (partial)	1997	1997	0	15,000.00	Retained by Boro	15,000.00	AUST-18	260	335	1.288	19,320	1.000	19,320
	361	361 Service Laterals from curb to house	varies	1995	0	-	Retained by customers	-	HWW-144	277.5	595.4	2.146	-	1.000	-
		Excluded Assets	TOTAL			215,647.06		215,647.06					548,450		548,450

21,023,527.36

Pennsylvania American Water Company

Borough of Kane Authority's Wastewater System

Appraisal Work Papers
As of September 30, 2019

Cost Approach
Replacement Cost New less Depreciation

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New less Depreciation (RCNLD)

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.0	Land & Land Rights		23.25	62,825.34	Non-Depr	0.00				23.25	23.25	100.00%	62,825.34	1,460,689	1,460,689	1,460,689	-
354.0	Structures & Improvements		23.71	21,158,500.80	R4.0	55.00				31.76	55.46	57.26%	12,114,945.13	501,642,135	671,909,981	1,173,552,072	1,163,717,588
360.0	Collection Sewers - Force		23.51	910,913.98	R3.0	60.00				37.94	61.45	61.75%	562,456.38	21,419,383	34,560,646	55,980,028	54,654,838
361.0	Collection Sewers - Gravity		35.95	17,472,483.03	R3.0	75.00				42.40	78.35	54.63%	9,544,842.17	628,202,263	740,813,751	1,369,016,008	1,310,436,247
363.0	Services to Customers		23.53	464,964.06	R3.0	55.00				33.05	56.58	58.41%	271,576.39	10,942,616	15,366,178	26,308,794	25,573,024
364.0	Flow Measuring Devices		19.83	48,914.86	R3.0	35.00				17.16	36.99	46.71%	22,846.47	969,994	839,211	1,809,206	1,712,021
371.0	Pumping Equipment		21.42	2,443,932.69	R3.0	35.00				15.89	37.32	42.81%	1,046,187.33	52,359,384	38,845,914	91,205,296	85,537,649
380.0	Wastewater and Disposal Equipment		32.15	10,126,485.78	R3.0	45.00				18.17	50.32	37.96%	3,843,952.28	325,586,007	183,963,770	509,549,779	455,691,864
381.0	Treatment Plant Sewers		21.15	2,604,456.84	R3.0	45.00				25.41	46.56	54.66%	1,423,704.62	55,084,244	66,173,952	121,258,198	117,200,559
389.0	Other Plant and Misc Equipment		16.25	1,210.46	R3.0	45.00				29.64	45.89	64.59%	781.83	19,670	35,878	55,548	54,471
390.0	Office Furniture and Equipment		13.65	41,209.98	R3.0	12.00				2.70	16.35	20.20%	8,325.62	562,532	111,395	673,929	494,520
391.0	Transportation Equipment		12.01	55,626.18	R3.0	10.00				4.00	16.01	39.54%	21,996.48	668,166	222,384	890,551	556,262
392.0	Stores Equipment		2.25	10,580.00	R3.0	35.00				32.94	35.19	93.61%	9,903.53	23,805	348,505	372,310	370,300
393.0	Tools, Shop, and Garage Equipment		12.21	103,909.72	R3.0	35.00				23.68	35.89	66.33%	68,918.37	1,269,022	2,460,586	3,729,606	3,636,840
394.0	Laboratory Equipment		19.05	10,529.65	R3.0	20.00				4.85	23.91	21.05%	2,216.42	200,628	51,104	251,731	210,594
395.0	Power Operated Equipment		5.25	4,434.92	R3.0	15.00				10.01	15.26	65.60%	2,909.14	23,283	44,394	67,677	66,524
396.0	Communications Equipment		7.77	9,866.83	R3.0	12.00				5.94	13.70	47.78%	4,714.06	76,634	58,571	135,203	118,402
397.0	Miscellaneous Equipment		18.58	8,713.03	R3.0	20.00				5.12	23.70	22.42%	1,953.55	161,869	44,632	206,502	174,261
Grand Total			28.82	55,539,558.15		57.98				31.64	60.43	52.24%	29,015,055.11	1,600,672,324	1,757,311,541	3,356,523,127	3,220,205,964
				55,539,558.15									29,015,055.11	1,600,672,324	1,757,311,541	3,356,523,127	3,220,205,964
				-									-	-	-	-	-

Pennsylvania American Water Company
Borough of Kane Authority
Wastewater Collection and Treatment System
Investor-Owned Utility
As of September 30, 2019

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353	Land & ROW	1996	23.25	62,825 62,825	Non-Depr	0.0	0	Non-Depr000	1.00000	23.25	23.25	100.000000%	62,825.34 62,825	1,460,689 1,460,689	1,460,689 1,460,689	1,460,689 1,460,689	-
354	Various	1993	26.25	23,901	R4.0	55.0	48	R4.0048	0.53035	29.17	55.42	52.634428%	12,580.32	627,410	697,202	1,324,611	1,314,573
354	Door	2003	16.25	2,228	R4.0	55.0	30	R4.0030	0.70211	38.62	54.87	70.384545%	1,568.06	36,203	86,040	122,242	122,532
354	3 yard rear load dumpster	2008	11.25	1,372	R4.0	55.0	20	R4.0020	0.80069	44.04	55.29	79.652740%	1,092.80	15,435	60,421	75,856	75,458
354	Reznor Heater	2009	10.25	1,857	R4.0	55.0	19	R4.0019	0.81061	44.58	54.83	81.305854%	1,509.90	19,035	82,788	101,823	102,138
354	Contract Bonds	1995	24.25	119,508	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	67,262.43	2,898,075	3,731,047	6,629,122	6,572,953
354	Mobilization	1995	24.25	467,101	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	262,896.87	11,327,196	14,582,889	25,910,086	25,690,548
354	Soil and Erosion Control	1995	24.25	16,028	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	9,021.11	388,684	500,401	889,085	881,552
354	Relocation of Exist Pipe	1995	24.25	45,943	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,857.79	1,114,111	1,434,331	2,548,442	2,526,849
354	Excavation (SBR)	1995	24.25	255,827	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	143,986.55	6,203,816	7,986,934	14,190,750	14,070,511
354	Backfill (SBR)	1995	24.25	28,567	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	16,078.11	692,743	891,853	1,584,595	1,571,169
354	Stone Base (SBR)	1995	24.25	12,071	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,793.93	292,724	376,859	669,583	663,909
354	Concrete (SBR)	1995	24.25	838,854	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	472,129.38	20,342,206	26,189,017	46,531,223	46,136,961
354	Reinforcing (SBR)	1995	24.25	390,976	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	220,051.71	9,481,166	12,206,269	21,687,435	21,503,676
354	Handrail (SBR)	1995	24.25	76,980	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	43,326.61	1,866,774	2,403,327	4,270,101	4,233,920
354	Nosings (SBR)	1995	24.25	2,920	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,643.57	70,815	91,169	161,983	160,611
354	Excavation (W.A.S. Pump Station)	1995	24.25	71,474	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	40,227.20	1,733,232	2,231,403	3,964,635	3,931,043
354	Backfill (W.A.S. Pump Station)	1995	24.25	3,347	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,883.66	81,159	104,486	185,646	184,073
354	Concrete (W.A.S. Pump Station)	1995	24.25	78,303	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	44,071.13	1,898,852	2,444,626	4,343,478	4,306,675
354	Reinforcing (W.A.S. Pump Station)	1995	24.25	35,101	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	19,756.02	851,210	1,095,867	1,947,076	1,930,579
354	Handrail (W.A.S. Pump Station)	1995	24.25	4,683	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,635.84	113,568	146,210	259,778	257,577
354	Nosings (W.A.S. Pump Station)	1995	24.25	2,351	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,323.03	57,004	73,388	130,392	129,287
354	Lintels, A.B.s (W.A.S. Pump Station)	1995	24.25	556	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	312.88	13,481	17,356	30,836	30,575
354	Masonry (W.A.S. Pump Station)	1995	24.25	5,105	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,873.37	123,802	159,386	283,188	280,789
354	Roof System (Trusses, shingles, plywooc	1995	24.25	8,373	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,712.33	203,036	261,393	464,429	460,494
354	Hatches (W.A.S. Pump Station)	1995	24.25	7,424	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,178.52	180,036	231,783	411,819	408,329

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-I(20)+0.5I	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Insulation (W.A.S. Pump Station)	1995	24.25	6,535	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,677.92	158,467	204,014	362,481	359,410
354	Door, Frame, Hardware (W.A.S. Pump S	1995	24.25	2,825	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,589.93	68,504	88,194	156,698	155,370
354	Fiberglass Specialties (portable safety rail	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	Excavation (Preliminary Treatment Struct	1995	24.25	5,972	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,361.21	144,821	186,446	331,267	328,461
354	Backfill (Preliminary Treatment Struct.)	1995	24.25	1,044	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	587.44	25,311	32,586	57,896	57,406
354	Concrete (Preliminary Treatment Struct.)	1995	24.25	174,913	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	98,445.53	4,241,632	5,460,774	9,702,406	9,620,197
354	Reinforcing (Preliminary Treatment Struc	1995	24.25	58,862	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	33,129.33	1,427,413	1,837,684	3,265,097	3,237,432
354	Masonry (Preliminary Treatment Struct.)	1995	24.25	54,138	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	30,470.19	1,312,841	1,690,181	3,003,022	2,977,577
354	Handrail (Preliminary Treatment Struct.)	1995	24.25	8,822	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,965.18	213,930	275,419	489,349	485,203
354	Nosings (Preliminary Treatment Struct.)	1995	24.25	2,604	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,465.42	63,139	81,287	144,426	143,202
354	Lintels, A.B.s (Preliminary Treatment Stru	1995	24.25	4,717	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,654.99	114,393	147,273	261,666	259,449
354	Cast-In-Place (Preliminary Treatment Stri	1995	24.25	3,313	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,864.50	80,334	103,424	183,758	182,201
354	Bar Screen - Coarse (Preliminary Treatm	1995	24.25	2,004	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,127.64	48,586	62,550	111,136	110,194
354	Bar Screen - Fine (Preliminary Treatment	1995	24.25	2,215	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,246.40	53,703	69,138	122,841	121,800
354	Precast Plank (Preliminary Treatment Str	1995	24.25	6,099	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,432.72	147,902	190,413	338,315	335,449
354	Roof System (Trusses, shingles, plywooc	1995	24.25	106,516	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	59,950.02	2,583,012	3,325,428	5,908,439	5,858,377
354	Door, Frame, Hardware (Preliminary Trea	1995	24.25	11,300	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,359.73	274,016	352,774	626,790	621,479
354	Overhead Door (Preliminary Treatment S	1995	24.25	11,572	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,512.97	280,619	361,275	641,893	636,455
354	Aluminum Windows (Preliminary Treatme	1995	24.25	18,107	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,190.89	439,086	565,289	1,004,374	995,864
354	Grating/Supports (Preliminary Treatment	1995	24.25	35,487	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	19,973.12	860,564	1,107,909	1,968,473	1,951,794
354	Embedding Angle (Preliminary Treatmen	1995	24.25	6,036	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,396.96	146,362	188,430	334,791	331,955
354	Excavation (Blower Building)	1995	24.25	2,367	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,331.97	57,389	73,884	131,274	130,161
354	Backfill (Blower Building)	1995	24.25	522	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	293.72	12,655	16,293	28,948	28,703
354	Concrete (Blower Building)	1995	24.25	21,025	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	11,833.18	509,845	656,386	1,166,232	1,156,350
354	Reinforcing (Blower Building)	1995	24.25	3,780	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,127.57	91,669	118,016	209,685	207,908
354	Masonry (Blower Building)	1995	24.25	46,883	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	26,387.12	1,136,918	1,463,694	2,600,612	2,578,577
354	Misc. Metals (Lintels, A.B.s) (Blower Build	1995	24.25	2,340	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,316.96	56,743	73,052	129,795	128,695

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Roof System (Trusses, shingles, plywooc	1995	24.25	52,096	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	29,321.16	1,263,334	1,626,445	2,889,778	2,865,293
354	Door, Frame, Hardware (Blower Building	1995	24.25	11,799	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,640.68	286,121	368,359	654,479	648,934
354	Aluminum Windows (Blower Building)	1995	24.25	6,036	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,396.96	146,362	188,430	334,791	331,955
354	Excavation (Aerobic Digesters)	1995	24.25	52,523	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	29,561.24	1,273,678	1,639,762	2,913,440	2,888,755
354	Backfill (Aerobic Digesters)	1995	24.25	10,982	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,180.94	266,313	342,857	609,169	604,008
354	Concrete (Aerobic Digesters)	1995	24.25	289,722	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	163,063.18	7,025,754	9,045,115	16,070,868	15,934,699
354	Reinforcing (Aerobic Digesters)	1995	24.25	130,685	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	73,553.19	3,169,119	4,079,996	7,249,115	7,187,693
354	Handrail (Aerobic Digesters)	1995	24.25	6,927	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,898.85	167,986	216,269	384,255	380,999
354	Nosings (Aerobic Digesters)	1995	24.25	1,248	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	702.38	30,263	38,961	69,224	68,637
354	Excavation (Garage)	1995	24.25	1,890	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,063.79	45,834	59,008	104,843	103,954
354	Backfill (Garage)	1995	24.25	953	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	536.36	23,110	29,752	52,862	52,414
354	Concrete - Footers (Garage)	1995	24.25	11,186	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,295.88	271,265	349,232	620,497	615,239
354	Reinforcing - Footers (Garage)	1995	24.25	3,240	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,823.63	78,573	101,157	179,730	178,207
354	Concrete - Slab (Garage)	1995	24.25	13,478	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,585.70	326,838	420,779	747,617	741,282
354	Reinforcing - Slab (Garage)	1995	24.25	2,160	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,215.76	52,382	67,438	119,820	118,805
354	Masonry (Garage)	1995	24.25	7,195	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,049.54	174,479	224,628	399,107	395,725
354	Metal Building (Garage)	1995	24.25	97,118	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	54,660.46	2,355,105	3,032,016	5,387,121	5,341,476
354	Door, Frame, Hardware (Garage)	1995	24.25	2,825	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,589.93	68,504	88,194	156,698	155,370
354	Overhead Door (Garage)	1995	24.25	11,572	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,512.97	280,619	361,275	641,893	636,455
354	Concrete (Effluent Water Building)	1995	24.25	3,635	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,045.84	88,147	113,483	201,630	199,922
354	Reinforcing (Effluent Water Building)	1995	24.25	2,160	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,215.76	52,382	67,438	119,820	118,805
354	Masonry (Effluent Water Building)	1995	24.25	8,112	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,565.47	196,708	253,247	449,955	446,142
354	Misc. Metals: Handrails (Effluent Water B	1995	24.25	5,491	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,090.47	133,158	171,428	304,585	302,004
354	Roof System (Trusses, shingles, plywooc	1995	24.25	12,963	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,295.81	314,348	404,699	719,047	712,954
354	Hatches (Effluent Water Building)	1995	24.25	3,846	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,164.61	93,265	120,071	213,335	211,528
354	Door, Frame, Hardware (Effluent Water E	1995	24.25	2,825	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,589.93	68,504	88,194	156,698	155,370
354	Concrete (W.A.S. Holding Tank)	1995	24.25	29,318	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	16,500.81	710,955	915,300	1,626,256	1,612,476

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Concrete (Chlorine Contact Tank)	1995	24.25	160,264	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	90,200.87	3,886,402	5,003,442	8,889,845	8,814,521
354	Reinforcing (Chlorine Contact Tank)	1995	24.25	45,362	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,530.86	1,100,025	1,416,197	2,516,222	2,494,902
354	Handrail (Chlorine Contact Tank)	1995	24.25	15,496	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	8,721.64	375,781	483,789	859,571	852,288
354	Rework Walkways (Chlorine Contact Tar	1995	24.25	7,256	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,084.02	175,964	226,540	402,505	399,094
354	Demolition (Control Building Renovations	1995	24.25	1,239	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	697.27	30,043	38,678	68,720	68,138
354	Concrete (Control Building Renovations)	1995	24.25	526	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	296.28	12,765	16,435	29,200	28,953
354	Misc. Metals (Control Building Renovatior	1995	24.25	5,087	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,863.16	123,362	158,819	282,181	279,791
354	Rubber Flooring (Control Building Renov	1995	24.25	11,977	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,740.93	290,440	373,919	664,360	658,731
354	Lab Furnishings/Apparatus (Control Build	1995	24.25	29,583	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	16,650.23	717,393	923,588	1,640,981	1,627,077
354	Misc. Metals: Ladder/Platform (Existing D	1995	24.25	4,322	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,432.79	104,819	134,947	239,766	237,735
354	Demo at Headworks	1995	24.25	7,166	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,032.94	173,763	223,707	397,470	394,103
354	Grading	1995	24.25	7,168	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,034.21	173,818	223,778	397,596	394,227
354	Seeding	1995	24.25	19,114	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,757.90	463,516	596,741	1,060,257	1,051,273
354	Fencing	1995	24.25	10,608	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,970.23	257,234	331,169	588,402	583,417
354	Paving (Bituminous & Stone)	1995	24.25	175,337	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	98,684.34	4,251,922	5,474,021	9,725,942	9,643,534
354	Ceiling Systems	1995	24.25	58,812	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	33,101.24	1,426,203	1,836,126	3,262,328	3,234,686
354	Painting	1995	24.25	203,076	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	114,296.32	4,924,581	6,340,017	11,264,598	11,169,153
354	Catch Basins	1995	24.25	28,079	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	15,803.54	680,913	876,623	1,557,535	1,544,338
354	Lavatory	1995	24.25	2,462	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,385.61	59,700	76,860	136,560	135,403
354	Water Heater	1995	24.25	1,829	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,029.30	44,349	57,095	101,444	100,585
354	Floor Drains	1995	24.25	2,938	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,653.79	71,255	91,736	162,991	161,610
354	Hydropneumatic Tank	1995	24.25	12,298	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,921.63	298,226	383,943	682,169	676,389
354	Trench Excavation	1995	24.25	90,814	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	51,112.81	2,202,251	2,835,227	5,037,478	4,994,795
354	Trench Backfill	1995	24.25	90,814	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	51,112.81	2,202,251	2,835,227	5,037,478	4,994,795
354	Change Order No. 1	1995	24.25	(28,589)	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	(16,090.88)	(693,293)	(892,561)	(1,585,854)	(1,572,417)
354	Change Order No. 2	1995	24.25	13,067	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,354.58	316,880	407,959	724,839	718,697
354	Change Order No. 4	1995	24.25	45,265	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,476.55	1,097,685	1,413,184	2,510,869	2,489,594

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Change Order No. 5	1995	24.25	49,985	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	28,132.78	1,212,131	1,560,525	2,772,657	2,749,164
354	Change Order No. 6	1995	24.25	19,450	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,946.91	471,659	607,225	1,078,884	1,069,743
354	Change Order No. 7	1995	24.25	10,179	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,729.21	246,849	317,799	564,649	559,864
354	Change Order No. 8	1995	24.25	6,586	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,706.59	159,702	205,604	365,307	362,211
354	Change Order No. 9	1995	24.25	2,046	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,151.42	49,610	63,869	113,479	112,518
354	Change Order No. 10	1995	24.25	4,466	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,513.51	108,297	139,424	247,722	245,623
354	Change Order No. 11	1995	24.25	49,918	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	28,095.19	1,210,512	1,558,440	2,768,951	2,745,490
354	Change Order No. 12	1995	24.25	56,770	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	31,951.89	1,376,682	1,772,371	3,149,053	3,122,371
354	Change Order No. 13	1995	24.25	2,401	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,351.26	58,221	74,955	133,175	132,047
354	Change Order No. 14	1995	24.25	176,982	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	99,610.20	4,291,814	5,525,378	9,817,192	9,734,010
354	Change Order No. 15	1995	24.25	46,430	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	26,132.28	1,125,937	1,449,557	2,575,495	2,553,673
354	Change Order No. 16	1995	24.25	17,511	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	9,855.38	424,630	546,678	971,308	963,078
354	Select Backfill	2004	15.25	20,022	R4.0	55.0	28	R4.0028	0.72172	39.69	54.94	72.242446%	14,464.38	305,336	794,673	1,100,009	1,101,210
354	Straw Bale Barrier/Filter Fabric	2004	15.25	21,317	R4.0	55.0	28	R4.0028	0.72172	39.69	54.94	72.242446%	15,399.95	325,085	846,073	1,171,158	1,172,437
354	Exploratory Excavation	2004	15.25	7,668	R4.0	55.0	28	R4.0028	0.72172	39.69	54.94	72.242446%	5,539.55	116,937	304,343	421,280	421,740
354	Mobilization/Demobilization	2004	15.25	9,372	R4.0	55.0	28	R4.0028	0.72172	39.69	54.94	72.242446%	6,770.56	142,923	371,975	514,898	515,460
354	Electrical Work	2004	15.25	120,132	R4.0	55.0	28	R4.0028	0.72172	39.69	54.94	72.242446%	86,786.30	1,832,013	4,768,039	6,600,052	6,607,260
354	Bond	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Inspection	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	Temp. Power Construction	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Mobilization	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	General Conditions	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Excavation and Backfill	1995	24.25	63,532	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	35,757.51	1,540,651	1,983,469	3,524,120	3,494,260
354	A	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	B	1995	24.25	3,177	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,787.88	77,033	99,173	176,206	174,713
354	C	1995	24.25	7,488	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,214.28	181,577	233,766	415,343	411,824
354	D	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354 E		1995	24.25	6,807	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,831.16	165,070	212,515	377,584	374,385
354 F		1995	24.25	10,437	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,874.45	253,107	325,856	578,963	574,057
354 H		1995	24.25	20,421	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	11,493.49	495,209	637,544	1,132,753	1,123,155
354 J		1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354 V		1995	24.25	2,950	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,660.17	71,530	92,090	163,620	162,234
354 W		1995	24.25	1,815	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,021.64	44,019	56,671	100,689	99,836
354 X		1995	24.25	3,857	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,170.99	93,540	120,425	213,964	212,152
354 Y		1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354 Z		1995	24.25	1,361	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	766.23	33,014	42,503	75,517	74,877
354 100 AMP Main Breaker		1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354 1200 AMP MCC		1995	24.25	34,035	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	19,155.81	825,349	1,062,573	1,887,921	1,871,925
354 30 KVA Trans, 1 phase		1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354 30 KVA Trans, 3 phase		1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354 15 KVA Trans, 3 phase		1995	24.25	5,446	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,064.93	132,056	170,012	302,067	299,508
354 45 KVA Trans, 3 phase		1995	24.25	3,857	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,170.99	93,540	120,425	213,964	212,152
354 Panel LP4		1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354 Panel LP4A		1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354 Panel LP5		1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354 Panel LP3		1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354 Panel LP2		1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354 Panel LP6		1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354 Manhole		1995	24.25	13,614	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,662.32	330,140	425,029	755,169	748,770
354 Light Pole Bases		1995	24.25	23,825	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	13,409.07	577,744	743,801	1,321,545	1,310,348
354 Fire Alarm Control Panel		1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354 Fire Alarm Auto Disks		1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354 Fire Alarm Pull Stations		1995	24.25	2,496	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,404.76	60,526	77,922	138,448	137,275
354 Fire Alarm Horns		1995	24.25	1,588	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	893.94	38,516	49,587	88,103	87,357

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)-0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)	
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Fire Alarm Heat Det.	1995	24.25	4,311	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,426.40	104,544	134,593	239,137	237,111
354	500Kw Generator	1995	24.25	124,795	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	70,237.96	3,026,279	3,896,100	6,922,379	6,863,725
354	Fuel Tank	1995	24.25	49,918	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	28,095.19	1,210,512	1,558,440	2,768,951	2,745,490
354	Auto Transfer SW.	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	1" PVC	1995	24.25	6,807	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,831.16	165,070	212,515	377,584	374,385
354	1 1/2" PVC	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354	2" PVC	1995	24.25	29,497	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	16,601.70	715,302	920,896	1,636,199	1,622,335
354	4" PVC	1995	24.25	12,706	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,151.50	308,130	396,694	704,824	698,852
354	3/4" GRC	1995	24.25	39,708	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	22,348.44	962,907	1,239,668	2,202,575	2,183,913
354	1" GRC	1995	24.25	4,992	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,809.52	121,051	155,844	276,895	274,549
354	1 1/4" GRC	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	1 1/2" GRC	1995	24.25	964	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	542.75	23,385	30,106	53,491	53,038
354	2" GRC	1995	24.25	3,857	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,170.99	93,540	120,425	213,964	212,152
354	4" GRC	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354	3/4" GRC PVC	1995	24.25	13,614	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,662.32	330,140	425,029	755,169	748,770
354	1" GRC PVC	1995	24.25	6,240	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,511.90	151,314	194,805	346,119	343,186
354	12 THHN	1995	24.25	9,076	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,108.22	220,093	283,353	503,446	499,180
354	10 THHN	1995	24.25	4,992	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,809.52	121,051	155,844	276,895	274,549
354	8 THHN	1995	24.25	4,992	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,809.52	121,051	155,844	276,895	274,549
354	6 THHN	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354	3 THHN	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354	3/0 THHN	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	500 MCM	1995	24.25	19,287	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,854.96	467,698	602,125	1,069,822	1,060,758
354	20 A Switches	1995	24.25	2,156	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,213.20	52,272	67,296	119,568	118,555
354	20 A Rec.	1995	24.25	4,425	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,490.26	107,295	138,134	245,430	243,350
354	System Cable	1995	24.25	108,912	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	61,298.59	2,641,116	3,400,233	6,041,349	5,990,160
354	Spare fuse Cabinet and Fuses	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-((20)+0.5)	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Coordination Drawing	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	Project Demo	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	30 AMP Disc.	1995	24.25	15,883	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	8,939.38	385,163	495,867	881,030	873,565
354	Fractional HP Starters	1995	24.25	1,588	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	893.94	38,516	49,587	88,103	87,357
354	Motor Connections	1995	24.25	23,752	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	13,368.20	575,983	741,534	1,317,517	1,306,354
354	20 KVAR capacitors	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	Fuel piping	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	C.O. 1 - 1% Bid Reduction	1995	24.25	(11,046)	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	(6,217.21)	(267,875)	(344,869)	(612,744)	(607,552)
354	C.O. 2 - Red. For Underground Service	1995	24.25	(1,135)	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	(638.53)	(27,512)	(35,419)	(62,931)	(62,398)
354	C.O. 3 - Various Adds	1995	24.25	10,825	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,092.50	262,502	337,951	600,453	595,366
354	C.O. 4 - Various Adds	1995	24.25	8,740	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,918.89	211,936	272,851	484,787	480,679
354	C.O. 5 - Various Adds	1995	24.25	3,881	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,184.27	94,112	121,162	215,274	213,450
354	C.O. 6 - Various Adds	1995	24.25	683	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	384.39	16,562	21,322	37,884	37,563
354	C.O. 7 - Various Adds	1995	24.25	1,949	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,096.67	47,251	60,832	108,083	107,168
354	C.O. 8 - Delayed Costs	1995	24.25	13,614	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,662.32	330,140	425,029	755,169	748,770
354	Contract Bond	1995	24.25	6,090	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,427.61	147,683	190,130	337,812	334,950
354	Office Mobilization	1995	24.25	5,890	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,315.23	142,840	183,896	326,736	323,968
354	Field Mobilization	1995	24.25	2,936	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,652.51	71,200	91,665	162,865	161,485
354	1/2 - 2" Blk. Stl. Pipe	1995	24.25	40,706	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	22,910.35	987,117	1,270,837	2,257,954	2,238,822
354	3/4 Copper Tubing	1995	24.25	1,588	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	893.94	38,516	49,587	88,103	87,357
354	2-3" PVC Intake	1995	24.25	3,063	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,724.02	74,281	95,632	169,913	168,473
354	2-3" CPVC Intake	1995	24.25	4,288	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,413.63	103,994	133,884	237,878	235,863
354	Automatic Air Vents	1995	24.25	862	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	485.28	20,909	26,919	47,827	47,422
354	Pumps	1995	24.25	964	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	542.75	23,385	30,106	53,491	53,038
354	Air Separators	1995	24.25	336	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	189.00	8,143	10,484	18,627	18,470
354	Expansion Tank	1995	24.25	2,587	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,455.84	62,727	80,756	143,482	142,266
354	Boilers	1995	24.25	43,801	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	24,652.25	1,062,169	1,367,460	2,429,629	2,409,043

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (26)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Finned Tube Radiation	1995	24.25	21,828	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,285.26	529,324	681,463	1,210,787	1,200,528
354	Gas Fired Units	1995	24.25	7,297	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,107.00	176,955	227,815	404,770	401,341
354	Propane Heater	1995	24.25	1,230	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	692.16	29,823	38,394	68,217	67,639
354	Thru-the-Wall A/C	1995	24.25	9,357	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,266.57	226,916	292,137	519,053	514,655
354	Misc. Demolition	1995	24.25	4,499	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,532.40	109,111	140,472	249,583	247,469
354	Concrete Pads	1995	24.25	799	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	449.52	19,368	24,935	44,303	43,928
354	Painting	1995	24.25	1,135	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	638.53	27,512	35,419	62,931	62,398
354	Misc. Cut and Patch	1995	24.25	5,790	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,259.04	140,419	180,779	321,198	318,477
354	Insulation	1995	24.25	3,177	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,787.88	77,033	99,173	176,206	174,713
354	ATC	1995	24.25	41,568	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	23,395.63	1,008,026	1,297,755	2,305,781	2,286,244
354	GRD's	1995	24.25	1,361	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	766.23	33,014	42,503	75,517	74,877
354	Fans	1995	24.25	23,162	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	13,036.17	561,677	723,116	1,284,793	1,273,907
354	Roof Hoods	1995	24.25	11,654	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,558.95	282,599	363,825	646,424	640,947
354	Roof Curbs	1995	24.25	3,812	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,145.45	92,439	119,008	211,447	209,656
354	Electric Heat	1995	24.25	5,700	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,207.96	138,218	177,946	316,164	313,485
354	Louvers	1995	24.25	5,790	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,259.04	140,419	180,779	321,198	318,477
354	Starters and Disconnect	1995	24.25	4,284	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,411.08	103,884	133,742	237,626	235,613
354	Balance	1995	24.25	1,361	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	766.23	33,014	42,503	75,517	74,877
354	Roofing	1995	24.25	1,246	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	701.10	30,208	38,890	69,098	68,512
354	Flue Pipe	1995	24.25	2,156	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,213.20	52,272	67,296	119,568	118,555
354	Motor Operated Damper and Bbd	1995	24.25	1,123	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	632.14	27,237	35,065	62,302	61,774
354	Fin Tube	1995	24.25	10,619	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,976.61	257,509	331,523	589,031	584,041
354	Galv. Duct Fab	1995	24.25	4,822	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,713.74	116,925	150,531	267,456	265,190
354	Galv. Duct Install	1995	24.25	3,857	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,170.99	93,540	120,425	213,964	212,152
354	Galv. Fitting Fab	1995	24.25	1,679	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	945.02	40,717	52,420	93,137	92,348
354	Galv. Fitting Duct	1995	24.25	2,099	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,181.28	50,897	65,525	116,422	115,436
354	Change Order #1	1995	24.25	1,248	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	702.38	30,263	38,961	69,224	68,637

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Bonds & Insurances	1995	24.25	123,207	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	69,344.03	2,987,762	3,846,513	6,834,276	6,776,369
354	Mobilization/Demobilization	1995	24.25	29,043	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	16,346.29	704,298	906,729	1,611,026	1,597,376
354	Temporary Facilities	1995	24.25	68,070	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	38,311.62	1,650,698	2,125,145	3,775,843	3,743,850
354	Supervision	1995	24.25	149,754	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	84,285.56	3,631,535	4,675,320	8,306,854	8,236,470
354	Testing Services	1995	24.25	37,439	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	21,071.39	907,884	1,168,830	2,076,714	2,059,118
354	Start-up	1995	24.25	13,614	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,662.32	330,140	425,029	755,169	748,770
354	Clear & Grub (Site Work)	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	Erosion Control (Site Work)	1995	24.25	6,807	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,831.16	165,070	212,515	377,584	374,385
354	Site Grading (Site Work)	1995	24.25	6,807	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,831.16	165,070	212,515	377,584	374,385
354	Fine Grading & Seeding (Site Work)	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	Concrete Sidewalks (Site Work)	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	Temporary Roadways (Site Work)	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Asphalt Roadways (Site Work)	1995	24.25	68,070	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	38,311.62	1,650,698	2,125,145	3,775,843	3,743,850
354	Gravel Roadways (Site Work)	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Chain link Fencing (Site Work)	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	Storm Piping (Site Work)	1995	24.25	36,304	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	20,432.86	880,372	1,133,411	2,013,783	1,996,720
354	Yard Piping & Precast Vaults Mat. (Site V	1995	24.25	726,080	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	408,657.25	17,607,440	22,668,218	40,275,658	39,934,400
354	Yard Piping & Precast Vaults Ins. (Site W	1995	24.25	374,385	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	210,713.89	9,078,836	11,688,300	20,767,136	20,591,175
354	Excavation and Dewatering (Preliminary '	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354	Backfill (Preliminary Treatment Structure)	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Concrete Footers & Base Slabs (Prelimin	1995	24.25	56,725	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	31,926.35	1,375,581	1,770,955	3,146,536	3,119,875
354	Concrete Walls (Preliminary Treatment S	1995	24.25	79,415	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	44,696.89	1,925,814	2,479,336	4,405,150	4,367,825
354	Concrete Suspended Slabs (Preliminary	1995	24.25	7,942	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,469.69	192,581	247,934	440,515	436,783
354	Concrete Slabs on Grade (Preliminary Tr	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354	Precast Concrete Planks (Preliminary Tre	1995	24.25	9,076	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,108.22	220,093	283,353	503,446	499,180
354	Masonry Building Construction (Prelimina	1995	24.25	86,222	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	48,528.05	2,090,884	2,691,851	4,782,734	4,742,210
354	Miscellaneous Metals (Preliminary Treatm	1995	24.25	69,885	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	39,333.26	1,694,716	2,181,816	3,876,532	3,843,686

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Roof Structure (Preliminary Treatment St	1995	24.25	117,988	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	66,406.80	2,861,209	3,683,585	6,544,794	6,489,340
354	Doors& Windows (Preliminary Treatment	1995	24.25	43,111	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	24,264.02	1,045,442	1,345,925	2,391,367	2,371,105
354	Durock Ceilings (Preliminary Treatment S	1995	24.25	38,573	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	21,709.92	935,395	1,204,249	2,139,644	2,121,515
354	Painting & Coatings (Preliminary Treatme	1995	24.25	74,877	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	42,142.78	1,815,767	2,337,660	4,153,427	4,118,235
354	Fiberglass Gratings (Preliminary Treatme	1995	24.25	49,918	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	28,095.19	1,210,512	1,558,440	2,768,951	2,745,490
354	Excavation and Dewatering (Sequential E	1995	24.25	120,257	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	67,683.86	2,916,232	3,754,424	6,670,656	6,614,135
354	Backfill (Sequential Batch Reactor)	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Concrete Base Slabs (Sequential Batch F	1995	24.25	648,934	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	365,237.41	15,736,650	20,259,719	35,996,369	35,691,370
354	Concrete Walls (Sequential Batch React	1995	24.25	884,910	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	498,051.02	21,459,068	27,626,890	49,085,958	48,670,050
354	Concrete Suspended Slabs (Sequential E	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Miscellaneous Metals (Sequential Batch I	1995	24.25	62,398	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	35,118.98	1,513,139	1,948,050	3,461,189	3,431,863
354	Painting & Coatings (Sequential Batch Re	1995	24.25	17,018	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	9,577.90	412,674	531,286	943,961	935,963
354	Demolition Work (Chlorine Contact Tank	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Concrete Slabs & Fillet (Chlorine Contact	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Concrete Walls (Chlorine Contact Tank)	1995	24.25	115,719	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	65,129.75	2,806,186	3,612,747	6,418,933	6,364,545
354	Miscellaneous Metals (Chlorine Contact T	1995	24.25	12,480	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,023.80	302,628	389,610	692,238	686,373
354	Painting & Coatings (Chlorine Contact Ta	1995	24.25	9,757	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,491.33	236,600	304,604	541,204	536,619
354	Demolition Work (Effluent Water Building	1995	24.25	34,035	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	19,155.81	825,349	1,062,573	1,887,921	1,871,925
354	Concrete Suspended Slabs (Effluent Wa	1995	24.25	7,034	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,958.87	170,572	219,598	390,170	386,865
354	Concrete Fillet (Effluent Water Building)	1995	24.25	3,857	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,170.99	93,540	120,425	213,964	212,152
354	Masonry Building Construction (Effluent V	1995	24.25	7,034	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,958.87	170,572	219,598	390,170	386,865
354	Miscellaneous Metals (Effluent Water Bui	1995	24.25	12,480	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,023.80	302,628	389,610	692,238	686,373
354	Roof Structure (Effluent Water Building)	1995	24.25	20,421	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	11,493.49	495,209	637,544	1,132,753	1,123,155
354	Door & Hatches (Effluent Water Building)	1995	24.25	7,942	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,469.69	192,581	247,934	440,515	436,783
354	Durock Ceilings (Effluent Water Building)	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354	Painting & Coatings (Effluent Water Build	1995	24.25	9,757	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,491.33	236,600	304,604	541,204	536,619
354	Shoring (W.A.S. Pump Structure)	1995	24.25	283,625	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	159,631.74	6,877,906	8,854,773	15,732,679	15,599,375

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Excavation and Dewatering (W.A.S. Purr	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Backfill (W.A.S. Pump Structure)	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Concrete Base Slabs (W.A.S. Pump Stru	1995	24.25	27,228	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	15,324.65	660,279	850,058	1,510,337	1,497,540
354	Concrete Walls (W.A.S. Pump Structure	1995	24.25	127,064	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	71,515.02	3,081,302	3,966,938	7,048,240	6,988,520
354	Concrete Suspended Slabs (W.A.S. Pun	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Masonry Building Construction (W.A.S. F	1995	24.25	5,446	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,064.93	132,056	170,012	302,067	299,508
354	Miscellaneous Metals (W.A.S. Pump Stru	1995	24.25	24,959	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	14,047.59	605,256	779,220	1,384,476	1,372,745
354	Roof Structure (W.A.S. Pump Structure)	1995	24.25	13,614	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,662.32	330,140	425,029	755,169	748,770
354	Fluid Applied Roofing (W.A.S. Pump Stru	1995	24.25	1,588	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	893.94	38,516	49,587	88,103	87,357
354	Doors & Hatches (W.A.S. Pump Structur	1995	24.25	9,076	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,108.22	220,093	283,353	503,446	499,180
354	Durock Ceilings (W.A.S. Pump Structure	1995	24.25	1,815	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,021.64	44,019	56,671	100,689	99,836
354	Painting & Coatings (W.A.S. Pump Struc	1995	24.25	14,749	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	8,300.85	357,651	460,448	818,099	811,168
354	Excavation (Belt Filter Press & Blower Bu	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Backfill (Belt Filter Press & Blower Buildin	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354	Concrete Footings (Belt Filter Press & Bl	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	Concrete Equipment Bases (Belt Filter Pr	1995	24.25	23,144	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	13,025.95	561,237	722,549	1,283,787	1,272,909
354	Concrete Slabs on Grade (Belt Filter Pres	1995	24.25	20,648	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	11,621.19	500,712	644,627	1,145,339	1,135,635
354	Concrete Suspended Slabs (Belt Filter Pr	1995	24.25	1,361	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	766.23	33,014	42,503	75,517	74,877
354	Masonry Building Construction (Belt Filter	1995	24.25	90,760	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	51,082.16	2,200,930	2,833,527	5,034,457	4,991,800
354	Miscellaneous Metals (Belt Filter Press &	1995	24.25	37,439	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	21,071.39	907,884	1,168,830	2,076,714	2,059,118
354	Roof Structure (Belt Filter Press & Blowe	1995	24.25	154,973	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	87,222.78	3,758,088	4,838,248	8,596,336	8,523,499
354	Doors& Windows (Belt Filter Press & Blo	1995	24.25	55,364	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	31,160.12	1,342,567	1,728,452	3,071,019	3,044,998
354	Durock Ceilings (Belt Filter Press & Blow	1995	24.25	59,902	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	33,714.22	1,452,614	1,870,128	3,322,742	3,294,588
354	Painting & Coatings (Belt Filter Press & E	1995	24.25	85,088	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	47,889.52	2,063,372	2,656,432	4,719,804	4,679,813
354	Demolition Work (W.A.S. Holding Tank)	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Concrete Floor Fill (W.A.S. Holding Tank	1995	24.25	15,202	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	8,556.26	368,656	474,616	843,272	836,127
354	Roof Repair (W.A.S. Holding Tank)	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019 75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)	
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Painting & Coatings (W.A.S. Holding Tar	1995	24.25	9,757	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,491.33	236,600	304,604	541,204	536,619
354	Excavation and Dewatering (Aerobics Dig	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Backfill (Aerobics Digesters)	1995	24.25	17,018	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	9,577.90	412,674	531,286	943,961	935,963
354	Concrete Base Slabs (Aerobics Digesters	1995	24.25	172,444	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	97,056.10	4,181,767	5,383,702	9,565,469	9,484,420
354	Concrete Walls (Aerobics Digesters)	1995	24.25	301,777	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	169,848.17	7,318,092	9,421,478	16,739,570	16,597,735
354	Concrete Suspended Slabs (Aerobics Dig	1995	24.25	9,076	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,108.22	220,093	283,353	503,446	499,180
354	Miscellaneous Metals (Aerobics Digesters	1995	24.25	29,951	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	16,857.11	726,307	935,064	1,661,371	1,647,294
354	Painting & Coatings (Aerobics Digesters)	1995	24.25	12,480	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,023.80	302,628	389,610	692,238	686,373
354	Demolition Work (Existing Control Buildin	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Demolition Work (Existing Sprinkling Filte	1995	24.25	113,450	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	63,852.69	2,751,163	3,541,909	6,293,072	6,239,750
354	Excavation and Dewatering (Septage Acc	1995	24.25	7,942	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,469.69	192,581	247,934	440,515	436,783
354	Backfill (Septage Acceptance Facility)	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354	Concrete Footers & Base Slabs (Septage	1995	24.25	11,799	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,640.68	286,121	368,359	654,479	648,934
354	Concrete Walls (Septage Acceptance Fa	1995	24.25	15,883	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	8,939.38	385,163	495,867	881,030	873,565
354	Concrete Suspended Slabs (Septage Ac	1995	24.25	9,530	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,363.63	231,098	297,520	528,618	524,139
354	Concrete Slabs on Grade (Septage Acce	1995	24.25	2,496	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,404.76	60,526	77,922	138,448	137,275
354	Masonry Building Construction (Septage	1995	24.25	10,211	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,746.74	247,605	318,772	566,376	561,578
354	Roof Structure (Septage Acceptance Fa	1995	24.25	31,786	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	17,878.75	770,326	991,735	1,762,060	1,747,130
354	Doors, Windows & Hatches (Septage Ac	1995	24.25	16,337	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	9,194.79	396,167	510,035	906,202	898,524
354	Durock Ceilings (Septage Acceptance Fa	1995	24.25	6,807	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,831.16	165,070	212,515	377,584	374,385
354	Painting & Coatings (Septage Acceptanc	1995	24.25	12,253	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,896.09	297,126	382,526	679,652	673,893
354	Demolition Work (Existing Grit Building)	1995	24.25	68,070	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	38,311.62	1,650,698	2,125,145	3,775,843	3,743,850
354	Plumbing Work - Mat.	1995	24.25	45,380	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	25,541.08	1,100,465	1,416,764	2,517,229	2,495,900
354	Plumbing Work - Install	1995	24.25	34,035	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	19,155.81	825,349	1,062,573	1,887,921	1,871,925
354	Change Order 1 (Deduct)	1995	24.25	(20,421)	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	(11,493.49)	(495,209)	(637,544)	(1,132,753)	(1,123,155)
354	Change Order 2 (N.C.)	1995	24.25	-	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	-	-	-	-	-
354	Change Order 3 (Add)	1995	24.25	2,213	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,245.38	53,659	69,081	122,740	121,700

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Change Order 4 (Add)	1995	24.25	20,188	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	11,362.13	489,550	630,257	1,119,807	1,110,319
354	Change Order 5 (Add)	1995	24.25	41,432	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	23,319.00	1,004,725	1,293,505	2,298,230	2,278,757
354	Change Order 6 (Add)	1995	24.25	11,084	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,238.41	268,789	346,045	614,833	609,624
354	Change Order 7 (Add)	1995	24.25	68,131	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	38,346.10	1,652,183	2,127,058	3,779,241	3,747,219
354	Change Order 8 (Add)	1995	24.25	2,244	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,262.87	54,412	70,051	124,463	123,408
354	Change Order 9 (Add)	1995	24.25	7,340	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,131.27	178,000	229,162	407,162	403,712
354	Change Order 10 (N.C.)	1995	24.25	-	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	-	-	-	-	-
354	Change Order 11 (Add)	1995	24.25	6,764	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,806.90	164,024	211,169	375,193	372,014
354	Bond	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Inspection	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	Temp. Power Construction	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Mobilization	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	General Conditions	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	Excavation and Backfill	1995	24.25	63,532	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	35,757.51	1,540,651	1,983,469	3,524,120	3,494,260
354	A	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354	B	1995	24.25	4,992	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,809.52	121,051	155,844	276,895	274,549
354	C	1995	24.25	6,807	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,831.16	165,070	212,515	377,584	374,385
354	D	1995	24.25	1,361	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	766.23	33,014	42,503	75,517	74,877
354	E	1995	24.25	5,219	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,937.22	126,553	162,928	289,481	287,029
354	F	1995	24.25	11,799	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,640.68	286,121	368,359	654,479	648,934
354	G	1995	24.25	454	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	255.41	11,005	14,168	25,172	24,959
354	V	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	W	1995	24.25	1,815	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,021.64	44,019	56,671	100,689	99,836
354	X	1995	24.25	1,361	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	766.23	33,014	42,503	75,517	74,877
354	Y	1995	24.25	1,815	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,021.64	44,019	56,671	100,689	99,836
354	Z	1995	24.25	908	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	510.82	22,009	28,335	50,345	49,918
354	H	1995	24.25	24,505	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	13,792.18	594,251	765,052	1,359,303	1,347,786

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	100 AMP Main Breaker	1995	24.25	22,690	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,770.54	550,233	708,382	1,258,614	1,247,950
354	1200 AMP MCC	1995	24.25	34,035	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	19,155.81	825,349	1,062,573	1,887,921	1,871,925
354	30 KVA Trans, 1 phase	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	30 KVA Trans, 3 phase	1995	24.25	6,353	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,575.75	154,065	198,347	352,412	349,426
354	40 KVA Trans, 3 phase	1995	24.25	3,857	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,170.99	93,540	120,425	213,964	212,152
354	15 KVA Trans, 3 phase	1995	24.25	2,723	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,532.46	66,028	85,006	151,034	149,754
354	Panel LP4	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Panel LP4A	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Panel LP6	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Panel LP1	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Panel LP3	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Panel LP2	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Panel LP5	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Manhole	1995	24.25	13,614	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,662.32	330,140	425,029	755,169	748,770
354	Light Pole Bases	1995	24.25	27,228	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	15,324.65	660,279	850,058	1,510,337	1,497,540
354	Fire Alarm Control Panel	1995	24.25	5,673	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,192.63	137,558	177,095	314,654	311,988
354	Auto Dialer Fire Alarm	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	Fire Pull Stations	1995	24.25	2,496	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,404.76	60,526	77,922	138,448	137,275
354	Fire Horns	1995	24.25	1,588	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	893.94	38,516	49,587	88,103	87,357
354	Fire Heat Detector	1995	24.25	4,765	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,681.81	115,549	148,760	264,309	262,070
354	500 KW Generator	1995	24.25	124,795	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	70,237.96	3,026,279	3,896,100	6,922,379	6,863,725
354	Fuel Tank	1995	24.25	49,918	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	28,095.19	1,210,512	1,558,440	2,768,951	2,745,490
354	Auto Transfer Switch	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	1" PVC	1995	24.25	9,076	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,108.22	220,093	283,353	503,446	499,180
354	1 1/2" PVC	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354	2" PVC	1995	24.25	34,035	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	19,155.81	825,349	1,062,573	1,887,921	1,871,925
354	4" PVC	1995	24.25	15,883	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	8,939.38	385,163	495,867	881,030	873,565

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5)	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	3/4" GRC	1995	24.25	39,708	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	22,348.44	962,907	1,239,668	2,202,575	2,183,913
354	1" GRC	1995	24.25	8,509	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,788.95	206,337	265,643	471,980	467,981
354	1 1/4" GRC	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354	1 1/2" GRC	1995	24.25	964	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	542.75	23,385	30,106	53,491	53,038
354	2" GRC	1995	24.25	20,421	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	11,493.49	495,209	637,544	1,132,753	1,123,155
354	4" GRC	1995	24.25	3,630	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,043.29	88,037	113,341	201,378	199,672
354	3/4" GRC PVC	1995	24.25	17,018	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	9,577.90	412,674	531,286	943,961	935,963
354	1" GRC PVC	1995	24.25	6,240	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,511.90	151,314	194,805	346,119	343,186
354	12 Wire	1995	24.25	13,614	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,662.32	330,140	425,029	755,169	748,770
354	10 Wire	1995	24.25	8,509	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	4,788.95	206,337	265,643	471,980	467,981
354	8 Wire	1995	24.25	6,353	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,575.75	154,065	198,347	352,412	349,426
354	6 Wire	1995	24.25	3,063	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,724.02	74,281	95,632	169,913	168,473
354	3 Wire	1995	24.25	4,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,554.11	110,047	141,676	251,723	249,590
354	3/0 Wire	1995	24.25	27,228	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	15,324.65	660,279	850,058	1,510,337	1,497,540
354	500 MCM	1995	24.25	23,618	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	13,292.85	572,737	737,355	1,310,092	1,298,991
354	20 A Switches	1995	24.25	1,974	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,111.04	47,870	61,629	109,499	108,572
354	20 A Rec.	1995	24.25	3,472	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,953.89	84,186	108,382	192,568	190,936
354	System Cable	1995	24.25	122,526	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	68,960.91	2,971,256	3,825,262	6,796,517	6,738,930
354	Spare fuse Cabinet and Fuses	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	Coordination Drawing	1995	24.25	11,345	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,385.27	275,116	354,191	629,307	623,975
354	Project Demo	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	30 AMP Disc.	1995	24.25	22,236	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,515.13	539,228	694,214	1,233,442	1,222,991
354	Fractional HP Starters	1995	24.25	3,404	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,915.58	82,535	106,257	188,792	187,193
354	Motor Connections	1995	24.25	28,589	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	16,090.88	693,293	892,561	1,585,854	1,572,417
354	20 KVAR capacitors	1995	24.25	18,152	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	10,216.43	440,186	566,705	1,006,891	998,360
354	Fuel piping	1995	24.25	2,269	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,277.05	55,023	70,838	125,861	124,795
354	C.O. 1 - 1% Bid Reduction	1995	24.25	(11,881)	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	(6,687.10)	(288,121)	(370,934)	(659,055)	(653,470)

Pennsylvania American Water Company
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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	C.O. 2 - Red. For Underground Service	1995	24.25	4,337	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,440.77	105,163	135,390	240,553	238,515
354	C.O. 3 - Various Adds	1995	24.25	8,944	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,033.83	216,888	279,226	496,114	491,911
354	C.O. 4 - Solenoid Valve, XFR.	1995	24.25	2,521	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,419.13	61,145	78,719	139,864	138,679
354	C.O. 5 - Various Adds	1995	24.25	2,382	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,340.91	57,774	74,380	132,155	131,035
354	C.O. 6 - Various Adds	1995	24.25	683	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	384.39	16,562	21,322	37,884	37,563
354	C.O. 7 - Various Adds	1995	24.25	2,489	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,400.93	60,360	77,709	138,070	136,900
354	C.O. 7 - Delayed Cost	1995	24.25	20,421	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	11,493.49	495,209	637,544	1,132,753	1,123,155
354	Contract Bond	1995	24.25	6,551	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,686.85	158,852	204,510	363,362	360,283
354	Office Mobilization	1995	24.25	6,335	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,565.54	153,625	197,780	351,405	348,428
354	Field Mobilization	1995	24.25	3,149	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,772.55	76,372	98,323	174,696	173,215
354	1/2 - 2" Blk. Stl. Pipe	1995	24.25	42,476	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	23,906.45	1,030,035	1,326,091	2,356,126	2,336,162
354	3/4 Copper Tubing	1995	24.25	1,588	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	893.94	38,516	49,587	88,103	87,357
354	2-3" PVC Intake	1995	24.25	3,063	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,724.02	74,281	95,632	169,913	168,473
354	2-3" CPVC Intake	1995	24.25	4,288	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,413.63	103,994	133,884	237,878	235,863
354	Automatic Air Vents	1995	24.25	862	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	485.28	20,909	26,919	47,827	47,422
354	Pumps	1995	24.25	964	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	542.75	23,385	30,106	53,491	53,038
354	Air Separators	1995	24.25	336	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	189.00	8,143	10,484	18,627	18,470
354	Expansion Tank	1995	24.25	2,587	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,455.84	62,727	80,756	143,482	142,266
354	Boilers	1995	24.25	43,801	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	24,652.25	1,062,169	1,367,460	2,429,629	2,409,043
354	Finned Tube Radiator	1995	24.25	21,828	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	12,285.26	529,324	681,463	1,210,787	1,200,528
354	Gas Fired Units	1995	24.25	10,864	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	6,114.53	263,451	339,173	602,624	597,518
354	Propane Heater	1995	24.25	1,230	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	692.16	29,823	38,394	68,217	67,639
354	Thru-the-Wall A/C	1995	24.25	6,875	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,869.47	166,720	214,640	381,360	378,129
354	Misc. Demolition	1995	24.25	3,714	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,090.54	90,073	115,962	206,035	204,289
354	Concrete Pads	1995	24.25	799	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	449.52	19,368	24,935	44,303	43,928
354	Painting	1995	24.25	1,135	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	638.53	27,512	35,419	62,931	62,398
354	Misc. Cut and Patch	1995	24.25	4,343	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,444.28	105,315	135,584	240,899	238,858

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Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Insulation	1995	24.25	3,177	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,787.88	77,033	99,173	176,206	174,713
354	ATC	1995	24.25	41,668	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	23,451.82	1,010,447	1,300,872	2,311,320	2,291,736
354	GRD's	1995	24.25	3,177	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,787.88	77,033	99,173	176,206	174,713
354	Fans	1995	24.25	26,098	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	14,688.68	632,877	814,781	1,447,658	1,435,392
354	Roof Hoods	1995	24.25	15,538	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	8,745.26	376,799	485,100	861,899	854,596
354	Roof Curbs	1995	24.25	5,337	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,003.63	129,415	166,611	296,026	293,518
354	Electric Heat	1995	24.25	12,770	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	7,187.26	309,671	398,677	708,348	702,346
354	Louvers	1995	24.25	5,790	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,259.04	140,419	180,779	321,198	318,477
354	Starters and Disconnect	1995	24.25	5,316	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,992.14	128,920	165,974	294,893	292,395
354	Balance	1995	24.25	1,475	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	830.09	35,765	46,045	81,810	81,117
354	Roofing	1995	24.25	465	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	261.80	11,280	14,522	25,802	25,583
354	Flue Pipe	1995	24.25	2,587	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,455.84	62,727	80,756	143,482	142,266
354	Motor Operated Damper and Bbd	1995	24.25	1,327	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	747.08	32,189	41,440	73,629	73,005
354	Fin Tube	1995	24.25	10,129	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	5,700.77	245,624	316,222	561,846	557,085
354	Galv. Duct Fab	1995	24.25	6,240	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	3,511.90	151,314	194,805	346,119	343,186
354	Galv. Duct Install	1995	24.25	4,992	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	2,809.52	121,051	155,844	276,895	274,549
354	Galv. Fitting Fab	1995	24.25	1,724	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	970.56	41,818	53,837	95,655	94,844
354	Galv. Fitting Install	1995	24.25	2,156	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	1,213.20	52,272	67,296	119,568	118,555
354	Change Order #1	1995	24.25	1,248	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	702.38	30,263	38,961	69,224	68,637
354	Select Backfill	2006	13.25	1,923	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	1,460.28	25,473	80,476	105,949	105,738
354	Straw Bale Barrier/Filter Fence	2006	13.25	14,965	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	11,366.79	198,283	626,424	824,707	823,061
354	Exploratory Excavation	2006	13.25	392	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	297.90	5,197	16,417	21,614	21,570
354	1 1/2" ID-2 Bituminous Wear Course	2006	13.25	46,163	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	35,064.16	611,661	1,932,386	2,544,047	2,538,969
354	4" ID-2 Bituminous Binder Course	2006	13.25	82,575	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	62,721.81	1,094,122	3,456,599	4,550,720	4,541,637
354	Access Road Construction	1995	24.25	-	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	-	-	-	-	-
354	Crush Stone Base Course	2006	13.25	107,660	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	81,775.50	1,426,495	4,506,648	5,933,143	5,921,300
354	Geotextile Material	2006	13.25	27,684	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	21,027.98	366,813	1,158,852	1,525,665	1,522,620
354	Crushed Limestone Shoulder	2006	13.25	7,382	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	5,607.46	97,817	309,027	406,844	406,032
354	24" HDPE Storm Sewer Installation	2006	13.25	1,538	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	1,168.22	20,379	64,381	84,759	84,590
354	Mobilization/Demobilization	2006	13.25	8,459	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	6,425.22	112,082	354,094	466,175	465,245
354	ALT for PA2A Material on Shoulder	2006	13.25	4,614	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	3,504.66	61,136	193,142	254,278	253,770
354	Other Costs	1995	24.25	167,993	R4.0	55.0	44	R4.0044	0.56756	31.22	55.47	56.282675%	94,550.80	4,073,823	5,244,733	9,318,556	9,239,600

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354	Lynch & Lynch	1994	25.25	109,243	R4.0	55.0	46	R4.0046	0.54887	30.19	55.44	54.455267%	59,488.46	2,758,381	3,298,040	6,056,421	6,008,354
354	Woods & Baker	1994	25.25	73,219	R4.0	55.0	46	R4.0046	0.54887	30.19	55.44	54.455267%	39,871.65	1,848,782	2,210,484	4,059,266	4,027,050
354	Junipers	1996	23.25	7,037	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	4,089.13	163,613	226,946	390,559	387,041
354	2 Boilers	2007	12.25	21,003	R4.0	55.0	22	R4.0022	0.78088	42.95	55.20	77.807971%	16,342.07	257,288	902,082	1,159,370	1,155,169
354	HTP Elite 80 boiler Kinzua WWTP	2010	9.25	7,289	R4.0	55.0	17	R4.0017	0.83047	45.68	54.93	83.160386%	6,061.47	67,422	332,956	400,379	400,889
354	Boiler	2015	4.25	11,375	R4.0	55.0	8	R4.0008	0.92012	50.61	54.86	92.253008%	10,493.94	48,344	575,697	624,042	625,634
354	Kenmore Freezer	2017	2.25	540	R4.0	55.0	4	R4.0004	0.96005	52.80	55.05	95.912807%	517.45	1,214	28,486	29,699	29,673
354	Pole Lighting - WWTP Kinzua & Pine	2017	2.25	5,830	R4.0	55.0	4	R4.0004	0.96005	52.80	55.05	95.912807%	5,591.48	13,117	307,811	320,928	320,636
354	Legal	1996	23.25	176,870	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	102,776.08	4,112,238	5,704,073	9,816,311	9,727,876
354	Admin	1996	23.25	29,634	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	17,219.67	688,987	955,692	1,644,679	1,629,862
354	Engineering - Basic (BCM)	1996	23.25	1,150,510	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	668,539.59	26,749,358	37,103,948	63,853,305	63,278,050
354	Engineering - inspection (BCM)	1996	23.25	452,608	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	263,002.18	10,523,145	14,596,621	25,119,766	24,893,462
354	Engineering - Additional (BCM)	1996	23.25	80,593	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	46,831.28	1,873,796	2,599,136	4,472,931	4,432,635
354	Engineering - Basic (KLH)	1996	23.25	537,284	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	312,205.77	12,491,861	17,327,420	29,819,281	29,550,639
354	Engineering - inspection (KLH)	1996	23.25	662,381	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	384,897.07	15,400,358	21,361,787	36,762,146	36,430,955
354	Engineering - additional (KLH)	1996	23.25	242,574	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	140,955.34	5,639,853	7,823,021	13,462,874	13,341,587
354	Interest per contract	1996	23.25	924,217	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	537,045.00	21,488,045	29,805,997	51,294,042	50,831,933
354	Refinancing	1996	23.25	709,332	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	412,179.65	16,491,979	22,875,971	39,367,949	39,013,283
354	Relocation expenses	1996	23.25	18,394	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	10,688.39	427,660	593,206	1,020,865	1,011,668
354	Additional Authority paid expenditures	1996	23.25	188,285	R4.0	55.0	42	R4.0042	0.58641	32.25	55.50	58.108108%	109,408.70	4,377,620	6,072,183	10,449,803	10,355,661
354	Kinzua Oil Well	1999	20.25	33,959	R4.0	55.0	37	R4.0037	0.63414	34.88	55.13	63.268638%	21,485.67	687,678	1,184,505	1,872,183	1,867,769
354	Engineering - West Run Interceptor	2001	18.25	31,791	R4.0	55.0	33	R4.0033	0.67285	37.01	55.26	66.974303%	21,291.78	580,185	1,176,584	1,756,769	1,748,503
354	Holman St. Project - Engineering	2002	17.25	19,263	R4.0	55.0	31	R4.0031	0.69234	38.08	55.33	68.823423%	13,257.20	332,280	733,521	1,065,801	1,059,445
354	Patching - Wetmore Ave.	2003	16.25	9,960	R4.0	55.0	30	R4.0030	0.70211	38.62	54.87	70.384545%	7,010.02	161,844	384,640	546,483	547,778
354	New roof - KWWTP	2006	13.25	9,170	R4.0	55.0	24	R4.0024	0.76111	41.86	55.11	75.957177%	6,964.94	121,497	383,838	505,334	504,326
354	Pine St. New Trinity Boiler (Allied System	2012	7.25	7,409	R4.0	55.0	13	R4.0013	0.87027	47.86	55.11	86.844493%	6,434.53	53,717	354,607	408,324	407,509
354	Structures & Improvements			21,158,501									12,114,945	501,642,135	671,909,981	1,173,552,072	1,163,717,588
360	3" Diameter Force Main	2004	15.25	41,474	R3.0	60.0	25	R3.0025	0.75917	45.55	60.80	74.917763%	31,071.74	632,486	1,889,162	2,521,647	2,488,468
360	4" Diameter Force Main	1995	24.25	62,816	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	38,107.09	1,523,278	2,349,302	3,872,580	3,768,934
360	Manholes Frame & Covers	1995	24.25	19,314	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	11,716.85	468,365	722,344	1,190,708	1,158,840
360	Inflow Protectors	1995	24.25	5,150	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	3,124.49	124,897	192,625	317,522	309,024
360	4" Diameter Force Main	1996	23.25	152,263	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	94,389.48	3,540,109	5,773,804	9,313,914	9,135,766
360	Air Release Valve and Vault	1996	23.25	6,688	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	4,145.97	155,496	253,609	409,105	401,280
360	2" Dia Force Main	1996	23.25	67,754	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	42,001.26	1,575,272	2,569,217	4,144,489	4,065,217
360	1 1/2 Diameter Service FM	1996	23.25	7,658	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	4,747.14	178,043	290,382	468,425	459,466
360	4" Diameter FM	1996	23.25	36,068	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	22,359.09	838,585	1,367,705	2,206,291	2,164,091
360	1 1/2" Diameter Service FM	1996	23.25	26,582	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	16,478.61	618,036	1,007,997	1,626,033	1,594,931
360	4" Diameter Force Main	1995	24.25	193,655	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	117,480.92	4,696,135	7,242,698	11,938,833	11,619,302
360	6" Diameter Force Main	1995	24.25	97,703	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	59,271.62	2,369,300	3,654,096	6,023,395	5,862,185
360	1 1/2 Diameter Service FM	1996	23.25	-	R3.0	60.0	39	R3.0039	0.63205	37.92	61.17	61.991172%	-	-	-	-	-
360	4" Diameter Force Main	1995	24.25	184,865	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	112,148.45	4,482,977	6,913,952	11,396,928	11,091,901
360	Air Release Valve Vault	1995	24.25	6,009	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	3,645.24	145,713	224,729	370,443	360,528
360	Force Main Signs	1995	24.25	2,915	R3.0	60.0	40	R3.0040	0.62327	37.40	61.65	60.665045%	1,768.43	70,691	109,024	179,715	174,905
360	Collection Sewers - Force			910,914									562,456	21,419,383	34,560,646	55,980,028	54,654,838

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Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-((20)+0.5)	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361	2-inch VCP Sewer	1968	51.25	1,559	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	573.14	79,923	46,441	126,365	116,961
361	4-inch VCP Sewer	1968	51.25	38,665	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	14,210.16	1,981,591	1,151,449	3,133,040	2,899,889
361	6-inch VCP Sewer	1968	51.25	149,957	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	55,111.82	7,685,282	4,465,711	12,150,993	11,246,754
361	8-inch VCP Sewer	1968	51.25	3,461,781	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	1,272,260.33	177,415,273	103,091,255	280,506,528	259,632,107
361	10-inch VCP Sewer	1968	51.25	1,564,562	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	575,004.95	80,183,795	46,592,652	126,776,447	117,342,139
361	12-inch VCP Sewer	1968	51.25	1,651,208	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	606,848.82	84,624,386	49,172,961	133,797,347	123,840,566
361	15-inch VCP Sewer	1968	51.25	127,683	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	46,925.78	6,543,747	3,802,396	10,346,143	9,576,215
361	16-inch VCP Sewer	1968	51.25	5,268	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	1,936.04	269,978	156,877	426,856	395,090
361	18-inch VCP Sewer	1968	51.25	42,316	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	15,551.82	2,168,684	1,260,164	3,428,848	3,173,684
361	20-inch VCP Sewer	1968	51.25	58,771	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	21,599.58	3,012,037	1,750,214	4,762,251	4,407,860
361	21-inch VCP Sewer	1968	51.25	275,954	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	101,418.17	14,142,650	8,217,915	22,360,565	20,696,561
361	24-inch VCP Sewer	1968	51.25	261,588	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	96,138.26	13,406,372	7,790,083	21,196,455	19,619,081
361	30-inch VCP Sewer	1968	51.25	57,987	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	21,311.29	2,971,836	1,726,854	4,698,690	4,349,028
361	Manholes (Walls and Base)	1968	51.25	134,000	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	49,247.30	6,867,481	3,990,509	10,857,990	10,049,972
361	Manhole Frame and Cover	1968	51.25	134,000	R3.0	75.0	68	R3.0068	0.39710	29.78	81.03	36.751820%	49,247.30	6,867,481	3,990,509	10,857,990	10,049,972
361	Sewer Probe	2003	16.25	2,307	R3.0	75.0	22	R3.0022	0.78729	59.05	75.30	78.419655%	1,808.86	37,483	136,207	173,690	172,998
361	0-8 Ft Deep	2004	15.25	56,281	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	44,944.67	858,288	3,402,761	4,261,049	4,221,089
361	8-12 Ft. Deep	2004	15.25	38,998	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	31,142.37	594,712	2,357,789	2,952,501	2,924,813
361	Over 12 Ft.	2004	15.25	1,839	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	1,468.61	28,045	111,188	139,234	137,928

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019 75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361	8" PVC Caps	2004	15.25	99	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	78.68	1,502	5,957	7,459	7,389
361	M.H. 0-6' Deep	2004	15.25	41,378	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	33,043.69	631,021	2,501,738	3,132,759	3,103,380
361	Manhole Barrel Over 6' VF	2004	15.25	1,773	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	1,416.16	27,044	107,217	134,261	133,002
361	Standard Manhole Frame & Covers	2004	15.25	5,747	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	4,589.40	87,642	347,464	435,105	431,025
361	Stainless Steel Inflow Protector	2004	15.25	8,046	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	6,425.16	122,698	486,449	609,148	603,435
361	Core Drill Manhole	2004	15.25	821	R3.0	75.0	20	R3.0020	0.80619	60.46	75.71	79.857350%	655.63	12,520	49,638	62,158	61,575
361	Mobilization/Project Closeout	1994	25.25	15,743	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	10,512.60	397,511	798,957	1,196,468	1,180,725
361	Select Backfill	1994	25.25	63,152	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	42,170.53	1,594,586	3,204,960	4,799,546	4,736,394
361	PADOT Shoulder Restoration	1994	25.25	10,100	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	6,744.58	255,032	512,588	767,620	757,520
361	Township Road Restoration	1994	25.25	5,679	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	3,792.05	143,388	288,196	431,583	425,905
361	Change Order 3	1994	25.25	19,735	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	13,178.29	498,308	1,001,550	1,499,858	1,480,124
361	Change Order 4	1995	24.25	1,770	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,208.13	42,933	92,240	135,174	132,784
361	30-inch Sewer up to 5' deep	1994	25.25	11,807	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	7,884.45	298,133	599,218	897,351	885,544
361	30-inch Sewer 5' to 7' deep	1994	25.25	36,434	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	24,329.15	919,953	1,849,015	2,768,969	2,732,535
361	30-inch Sewer 7' to 9' deep	1994	25.25	389,261	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	259,934.44	9,828,851	19,755,017	29,583,868	29,194,607
361	30-inch Sewer 9' to 11' deep	1994	25.25	153,022	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	102,182.43	3,863,804	7,765,864	11,629,669	11,476,647
361	30-inch PVC Sewer 11' to 13' deep	1994	25.25	62,342	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	41,629.88	1,574,143	3,163,871	4,738,013	4,675,671
361	30-inch PVC Sewer over 13' deep	1994	25.25	111,663	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	74,564.34	2,819,487	5,666,890	8,486,377	8,374,714
361	30-inch DIP Encase. Stream Xing	1994	25.25	7,872	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	5,256.30	198,755	399,479	598,234	590,363
361	30-inch sewer connections	1994	25.25	4,498	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	3,003.60	113,575	228,274	341,848	337,350
361	Miscellaneous Concrete	1994	25.25	3,374	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	2,252.70	85,181	171,205	256,386	253,013
361	5-foot Manholes, 5'-0" or less depth	1994	25.25	95,583	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	63,826.47	2,413,458	4,850,812	7,264,270	7,168,688
361	Extra Depth Manholes over 5'-0"	1994	25.25	16,868	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	11,263.50	425,904	856,026	1,281,930	1,265,063
361	PADOT Highway Crossing	1994	25.25	26,988	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	18,021.59	681,447	1,369,641	2,051,088	2,024,100
361	Grout Road Bore (C.O. No. 1)	1994	25.25	10,795	R3.0	75.0	34	R3.0034	0.67660	50.75	76.00	66.776316%	7,208.64	272,579	547,856	820,435	809,640
361	Exploratory Excavations	1995	24.25	429	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	292.88	10,408	22,361	32,769	32,190
361	Special Backfill	1995	24.25	40,716	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	27,783.68	987,354	2,121,284	3,108,638	3,053,672
361	Mobilization/Demobilization	1995	24.25	27,898	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	19,037.14	676,527	1,453,486	2,130,012	2,092,350

Pennsylvania American Water Company
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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)-0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361	Bituminous Pavement Trench Restoratio	1995	24.25	20,966	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	14,306.75	508,422	1,092,320	1,600,742	1,572,438
361	Change Order 1	1995	24.25	3,230	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	2,203.92	78,321	168,269	246,590	242,230
361	a. 0-8 Ft Deep	1995	24.25	289,032	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	197,230.65	7,009,023	15,058,560	22,067,583	21,677,390
361	b. 8-12 Ft. Deep	1995	24.25	106,613	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	72,751.17	2,585,372	5,554,552	8,139,924	7,995,996
361	Manholes	1995	24.25	145,113	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	99,022.43	3,518,979	7,560,362	11,079,341	10,883,439
361	Concrete Encasement	1995	24.25	1,545	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,054.36	37,469	80,501	117,970	115,884
361	Concrete Thrust Blocks	1995	24.25	-	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	-	-	-	-	-
361	Air Testing - Sewers	1995	24.25	8,880	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	6,059.67	215,344	462,656	677,999	666,011
361	Hydrostatic Testing - FM	1995	24.25	2,855	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,948.38	69,240	148,759	217,998	214,144
361	Vacuum Testing- MH	1995	24.25	8,799	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	6,004.02	213,366	458,407	671,773	659,895
361	Internal TV Inspection Sewers	1995	24.25	9,984	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	6,812.95	242,113	520,169	762,282	748,804
361	Exploratory Excavation	1996	23.25	209	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	145.10	4,859	11,033	15,892	15,675
361	Special Backfill	1996	23.25	57,534	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	39,942.06	1,337,654	3,037,195	4,374,849	4,315,014
361	Mobilization/Demobilization	1996	23.25	43,890	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	30,470.19	1,020,443	2,316,953	3,337,396	3,291,750
361	Bituminous Pavement Trench Restoratio	1996	23.25	48,221	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	33,476.73	1,121,131	2,545,570	3,666,701	3,616,552
361	0-8 Ft Deep	1996	23.25	373,151	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	259,056.09	8,675,754	19,698,625	28,374,378	27,986,302
361	8-12 Ft Deep	1996	23.25	182,231	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	126,512.22	4,236,877	9,619,989	13,856,867	13,667,346
361	12 - 16 Ft Deep	1996	23.25	19,976	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	13,868.29	464,447	1,054,545	1,518,992	1,498,217
361	12" Diameter Bore	1996	23.25	15,048	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	10,446.92	349,866	794,384	1,144,250	1,128,600
361	16" Diameter Bore	1996	23.25	46,973	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	32,610.36	1,092,116	2,479,691	3,571,808	3,522,956
361	Manholes	1996	23.25	203,407	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	141,213.36	4,729,216	10,737,864	15,467,080	15,255,537
361	Concrete Encasement	1996	23.25	3,762	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	2,611.73	87,467	198,596	286,062	282,150
361	Concrete Thrust Blocks	1996	23.25	836	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	580.38	19,437	44,132	63,569	62,700
361	Air Testing Sewer	1996	23.25	14,270	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	9,906.80	331,778	753,313	1,085,091	1,070,250
361	Hydrostatic Testing - FM	1996	23.25	11,164	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	7,750.31	259,557	589,334	848,891	837,281
361	Vacuum Test Manholes	1996	23.25	12,540	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	8,705.77	291,555	661,987	953,542	940,500
361	Internal TV Inspection	1996	23.25	15,177	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	10,536.16	352,855	801,170	1,154,024	1,138,241
361	Manhole Frames and Covers	1996	23.25	26,334	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	18,282.11	612,266	1,390,172	2,002,437	1,975,050
361	Inflow Protectors	1996	23.25	5,016	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	3,482.31	116,622	264,795	381,417	376,200
361	Exploratory Excavation	1996	23.25	3,135	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	2,176.44	72,889	165,497	238,385	235,125
361	Special Backfill	1996	23.25	91,602	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	63,593.43	2,129,735	4,835,644	6,965,380	6,870,114
361	Mobilization/Demobilization	1996	23.25	20,727	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	14,389.77	481,911	1,094,198	1,576,109	1,554,553
361	Bituminous Pavement Trench Restoratio	1996	23.25	25,499	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	17,702.46	592,853	1,346,095	1,938,948	1,912,429
361	Field Office	1996	23.25	13,585	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	9,431.25	315,851	717,152	1,033,003	1,018,875
361	Bituminous Paving	1996	23.25	154,978	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	107,591.68	3,603,231	8,181,272	11,784,503	11,623,326
361	Job Trailer Time Extension	1996	23.25	2,264	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	1,571.88	52,642	119,526	172,168	169,814
361	0-8 Ft Deep	1996	23.25	560,198	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	388,912.05	13,024,612	29,572,872	42,597,485	42,014,879
361	8-12 Ft Deep	1996	23.25	373,770	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	259,486.30	8,690,161	19,731,338	28,421,500	28,032,779
361	12 - 16 Ft Deep	1996	23.25	70,982	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	49,278.28	1,650,323	3,747,120	5,397,443	5,323,622
361	16" Diameter Bore	1996	23.25	94,886	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	65,873.64	2,206,100	5,009,032	7,215,131	7,116,450
361	Manholes	1996	23.25	191,896	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	133,221.76	4,461,579	10,130,182	14,591,761	14,392,190
361	Concrete Encasement	1996	23.25	10,450	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	7,254.81	242,963	551,656	794,618	783,750
361	Concrete Thrust Blocks	1996	23.25	418	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	290.19	9,719	22,066	31,785	31,350
361	Air Testing Sewer	1996	23.25	9,458	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	6,566.18	219,901	499,293	719,193	709,357
361	Hydrostatic Testing-FM	1996	23.25	2,405	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	1,669.33	55,906	126,936	182,842	180,341
361	Vacuum Test Manholes	1996	23.25	9,301	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	6,456.78	216,237	490,973	707,210	697,538
361	Internal TV Inspection	1996	23.25	16,088	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	11,168.92	374,046	849,284	1,223,330	1,206,599

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361	Manhole Frames and Covers	1996	23.25	48,363	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	33,575.25	1,124,430	2,553,062	3,677,492	3,627,195
361	Inflow Protectors	1996	23.25	2,508	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	1,741.15	58,311	132,397	190,708	188,100
361	Manhole Ring Adjustment	1996	23.25	6,793	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	4,715.62	157,926	358,576	516,502	509,438
361	Exploratory Excavations	1995	24.25	1,717	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,171.52	41,632	89,445	131,078	128,760
361	Special Backfill	1995	24.25	1,840	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,255.44	44,615	95,853	140,468	137,984
361	Mobilization/Demobilization	1995	24.25	182,410	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	124,473.62	4,423,443	9,503,561	13,927,004	13,680,750
361	Bituminous Pavement Trench Restoratio	1995	24.25	41,203	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	28,116.39	999,178	2,146,687	3,145,864	3,090,240
361	Furnish and Install (6) signs to locate For	1995	24.25	1,931	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,317.96	46,836	100,626	147,462	144,855
361	Dug up Bore Pit then backfilled it in	1995	24.25	3,734	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	2,548.14	90,554	194,550	285,104	280,063
361	a. 0-8 Ft Deep	1995	24.25	732,794	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	500,047.00	17,770,264	38,178,589	55,948,853	54,959,581
361	b. 8-12 Ft. Deep	1995	24.25	298,401	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	203,624.20	7,236,232	15,546,708	22,782,939	22,380,098
361	16" Diameter Steel Casing Boring	1995	24.25	283,916	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	193,739.53	6,884,958	14,792,013	21,676,971	21,293,685
361	Manholes	1995	24.25	213,424	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	145,636.77	5,175,521	11,119,367	16,294,889	16,006,767
361	Concrete Encasement	1995	24.25	79,509	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	54,255.86	1,928,101	4,142,435	6,070,535	5,963,198
361	Concrete Thrust Blocks	1995	24.25	8,498	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	5,799.01	206,080	442,754	648,835	637,362
361	Air Testing - Sewers	1995	24.25	4,037	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	2,754.72	97,895	210,322	308,217	302,768
361	Hydrostatic Testing - FM	1995	24.25	5,817	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	3,969.24	141,056	303,052	444,107	436,255
361	Vacuum Testing- MH	1995	24.25	219	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	149.37	5,308	11,404	16,712	16,417
361	Internal TV Inspection Sewers	1995	24.25	18,694	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	12,756.57	453,333	973,964	1,427,297	1,402,060
361	Manholes Frame & Covers	1995	24.25	54,187	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	36,975.99	1,314,023	2,823,117	4,137,139	4,063,988
361	Inflow Protectors	1995	24.25	2,575	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,757.27	62,449	134,168	196,617	193,140
361	Special Backfill	1996	23.25	8,540	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	5,928.63	198,549	450,813	649,362	640,481
361	Air Testing Sewer	1996	23.25	4,616	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	3,204.31	107,312	243,655	350,967	346,167
361	Mobilization/Demobilization	1996	23.25	33,440	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	23,215.38	777,480	1,765,298	2,542,778	2,508,000
361	Bituminous Pavement Trench Restoratio	1996	23.25	23,156	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	16,075.85	538,378	1,222,408	1,760,786	1,736,704
361	0-8 Ft Deep	1996	23.25	658,703	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	457,298.03	15,314,850	34,772,942	50,087,792	49,402,741
361	8-12 Ft Deep	1996	23.25	338,524	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	235,016.56	7,870,673	17,870,659	25,741,332	25,389,268
361	12 - 16 Ft Deep	1996	23.25	114,919	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	79,781.11	2,671,859	6,066,556	8,738,414	8,618,899
361	Over 16 Ft Deep	1996	23.25	82,513	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	57,283.95	1,918,432	4,355,872	6,274,304	6,188,490
361	16" Diameter Bore	1996	23.25	18,810	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	13,058.65	437,333	992,980	1,430,312	1,410,750
361	18" Diameter Bore	1996	23.25	28,215	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	19,587.98	655,999	1,489,470	2,145,469	2,116,125
361	Manholes	1996	23.25	201,223	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	139,697.32	4,678,445	10,622,584	15,301,029	15,091,757
361	Concrete Encasement	1996	23.25	6,270	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	4,352.88	145,778	330,993	476,771	470,250
361	Exploratory Excavation	1996	23.25	4,076	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	2,829.37	94,755	215,146	309,901	305,663
361	Vacuum Test Manholes	1996	23.25	10,555	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	7,327.35	245,392	557,172	802,564	791,588
361	Internal TV Inspection	1996	23.25	46,523	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	32,298.40	1,081,669	2,455,970	3,537,639	3,489,255
361	Manhole Frames and Covers	1996	23.25	55,385	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	38,450.48	1,287,701	2,923,774	4,211,475	4,153,875
361	Inflow Protectors	1996	23.25	1,756	R3.0	75.0	31	R3.0031	0.70380	52.79	76.04	69.423987%	1,218.81	40,818	92,678	133,496	131,670
361	Exploratory Excavations	1995	24.25	644	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	439.32	15,612	33,542	49,154	48,285
361	Special Backfill	1995	24.25	22,814	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	15,567.70	553,232	1,188,594	1,741,826	1,711,028
361	Mobilization/Demobilization	1995	24.25	6,438	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	4,393.19	156,122	335,420	491,541	482,850
361	Bituminous Pavement Trench Restoratio	1995	24.25	4,893	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	3,338.82	118,652	254,919	373,571	366,966
361	0-8 Ft Deep	1995	24.25	42,954	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	29,311.34	1,041,643	2,237,921	3,279,564	3,221,576
361	8-12 Ft. Deep	1995	24.25	116,921	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	79,784.66	2,835,323	6,091,559	8,926,882	8,769,039
361	12-16 Ft. Deep	1995	24.25	100,738	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	68,741.65	2,442,885	5,248,425	7,691,310	7,555,315
361	12" Diameter Boring	1995	24.25	10,945	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	7,468.42	265,407	570,214	835,820	820,845
361	16" Diameter Boring	1995	24.25	38,628	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	26,359.12	936,729	2,012,519	2,949,248	2,897,100

Pennsylvania American Water Company
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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361	Manholes	1995	24.25	123,405	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	84,209.48	2,992,568	6,429,394	9,421,962	9,255,365
361	Concrete Encasement	1995	24.25	1,502	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,025.08	36,428	78,265	114,693	112,685
361	Concrete Thrust Blocks	1995	24.25	579	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	395.39	14,051	30,188	44,239	43,457
361	Air Testing - Sewers	1995	24.25	5,382	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	3,672.78	130,520	280,417	410,937	403,671
361	Hydrostatic Testing - FM	1995	24.25	5,777	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	3,942.15	140,093	300,983	441,076	433,277
361	Vacuum Testing- MH	1995	24.25	5,322	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	3,631.70	129,060	277,280	406,341	399,156
361	Internal TV Inspection Sewers	1995	24.25	7,813	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	5,331.13	189,453	407,032	596,485	585,938
361	Manholes Frame & Covers	1995	24.25	12,447	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	8,493.49	301,835	648,478	950,313	933,510
361	Inflow Protectors	1995	24.25	2,575	R3.0	75.0	32	R3.0032	0.69469	52.10	76.35	68.238376%	1,757.27	62,449	134,168	196,617	193,140
361	18" PVC Sewer Pipe	2001	18.25	132,074	R3.0	75.0	24	R3.0024	0.76851	57.64	75.89	75.952036%	100,313.17	2,410,357	7,612,767	10,023,124	9,905,578
361	24" PVC Sewer Pipe	2001	18.25	224,055	R3.0	75.0	24	R3.0024	0.76851	57.64	75.89	75.952036%	170,174.13	4,088,999	12,914,515	17,003,513	16,804,105
361	306"PVC Sewer Pipe	2001	18.25	139,150	R3.0	75.0	24	R3.0024	0.76851	57.64	75.89	75.952036%	105,687.09	2,539,483	8,020,593	10,560,077	10,436,234
361	Manholes	2001	18.25	39,312	R3.0	75.0	24	R3.0024	0.76851	57.64	75.89	75.952036%	29,858.26	717,444	2,265,944	2,983,388	2,948,400
361	Northwest Project	2007	12.25	639	R3.0	75.0	16	R3.0016	0.84430	63.32	75.57	83.789864%	535.42	7,828	40,461	48,289	47,925
361	Sewer line replacement (Hospital)	2013	6.25	27,511	R3.0	75.0	8	R3.0008	0.92160	69.12	75.37	91.707576%	25,229.24	171,941	1,901,528	2,073,469	2,063,290
361	Sewer line replacement (Park Ave)	2013	6.25	18,585	R3.0	75.0	8	R3.0008	0.92160	69.12	75.37	91.707576%	17,044.15	116,158	1,284,617	1,400,776	1,393,899
361	Sewer line extension (Birch and Elk)	2013	6.25	8,605	R3.0	75.0	8	R3.0008	0.92160	69.12	75.37	91.707576%	7,891.26	53,780	594,764	648,545	645,361
361	Sewer Line Shady Point	1998	21.25	29,868	R3.0	75.0	28	R3.0028	0.73133	54.85	76.10	72.076216%	21,527.37	634,685	1,638,233	2,272,918	2,240,063
361	Sewer Line exten	1999	20.25	20,869	R3.0	75.0	27	R3.0027	0.74058	55.54	75.79	73.281436%	15,293.44	422,607	1,159,090	1,581,696	1,565,210
361	Holman St.-Sanitary Sewer Prj.	2002	17.25	64,267	R3.0	75.0	23	R3.0023	0.77789	58.34	75.59	77.179521%	49,600.71	1,108,600	3,749,318	4,857,918	4,820,000
361	Highland Ave. Sewer Line	2003	16.25	13,095	R3.0	75.0	22	R3.0022	0.78729	59.05	75.30	78.419655%	10,269.05	212,794	773,260	986,054	982,125
361	North Fraley Street Project	2009	10.25	6,326	R3.0	75.0	14	R3.0014	0.86350	64.76	75.01	86.335155%	5,461.31	64,839	409,653	474,492	474,428
361	Wilson Run Project	2012	7.25	30,511	R3.0	75.0	10	R3.0010	0.90216	67.66	74.91	90.321719%	27,557.67	221,202	2,064,345	2,285,547	2,288,293
361	Sewer Manhole	2016	3.25	11,360	R3.0	75.0	4	R3.0004	0.96069	72.05	75.30	95.683931%	10,869.83	36,920	818,498	855,419	852,011
				17,472,483									9,544,842	628,202,263	740,813,751	1,369,016,008	1,310,436,247
363	6" PVC Service Sewer	2004	15.25	1,146	R3.0	55.0	28	R3.0028	0.73133	40.22	55.47	72.507662%	830.76	17,473	46,082	63,555	63,017
363	8" x 6" PVC Wys	2004	15.25	43	R3.0	55.0	28	R3.0028	0.73133	40.22	55.47	72.507662%	31.47	662	1,746	2,407	2,387
363	Service Connections	1995	24.25	7,079	R3.0	55.0	44	R3.0044	0.58858	32.37	56.62	57.170611%	4,047.04	171,663	229,143	400,806	389,338
363	6" Diameter Service Sewer	1995	24.25	48,524	R3.0	55.0	44	R3.0044	0.58858	32.37	56.62	57.170611%	27,741.34	1,176,701	1,570,714	2,747,416	2,668,807
363	Sewer Connections	1996	23.25	13,860	R3.0	55.0	42	R3.0042	0.60583	33.32	56.57	58.900477%	8,163.61	322,245	461,815	784,060	762,300
363	6" Diameter Service Sewer	1996	23.25	61,965	R3.0	55.0	42	R3.0042	0.60583	33.32	56.57	58.900477%	36,497.50	1,440,679	2,064,664	3,505,343	3,408,059
363	Service Connections	1996	23.25	11,970	R3.0	55.0	42	R3.0042	0.60583	33.32	56.57	58.900477%	7,050.39	278,303	398,840	677,143	658,350
363	6" Diameter Service Sewer	1996	23.25	149,027	R3.0	55.0	42	R3.0042	0.60583	33.32	56.57	58.900477%	87,777.32	3,464,866	4,965,563	8,430,429	8,196,458
363	Service Connections	1995	24.25	4,225	R3.0	55.0	44	R3.0044	0.58858	32.37	56.62	57.170611%	2,415.68	102,465	136,776	239,241	232,396
363	6" Diameter Service Sewer	1995	24.25	60,911	R3.0	55.0	44	R3.0044	0.58858	32.37	56.62	57.170611%	34,823.33	1,477,098	1,971,697	3,448,795	3,350,119
363	Sewer Connections	1996	23.25	9,324	R3.0	55.0	42	R3.0042	0.60583	33.32	56.57	58.900477%	5,491.88	216,783	310,676	527,459	512,820
363	6" Diameter Service Sewer	1996	23.25	75,915	R3.0	55.0	42	R3.0042	0.60583	33.32	56.57	58.900477%	44,714.30	1,765,024	2,529,488	4,294,512	4,175,325
363	Service Connections	1995	24.25	4,586	R3.0	55.0	44	R3.0044	0.58858	32.37	56.62	57.170611%	2,610.18	110,716	147,788	258,504	251,108
363	6" Diameter Service Sewer	1995	24.25	16,410	R3.0	55.0	44	R3.0044	0.58858	32.37	56.62	57.170611%	9,381.59	397,938	531,186	929,124	902,540
363	Services to Customers			464,964									271,576	10,942,616	15,366,178	26,308,794	25,573,024
364	Greyline SLT 5.0 Flow Meter - Kinzua	2016	3.25	2,911	R3.0	35.0	9	R3.0009	0.91187	31.92	35.17	90.759170%	2,641.84	9,460	92,913	102,374	101,879
364	Flowmeters (2)	1996	23.25	19,528	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	7,471.89	454,014	281,391	735,406	683,463
364	Flowmeters (2)	1988	21.25	22,161	R3.0	35.0	61	R3.0061	0.44974	15.74	36.99	42.552041%	9,429.78	470,913	348,808	819,720	775,621

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-|(20)+0.5|	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
364	3 Pen Chart recorder	2011	8.25	4,316	R3.0	35.0	24	R3.0024	0.76851	26.90	35.15	76.529161%	3,302.96	35,607	116,099	151,706	151,058
364	Flow Measuring Devices			48,915									22,846	969,994	839,211	1,809,206	1,712,021
371	Allegheny Power	1995	24.25	62,892	R3.0	35.0	69	R3.0069	0.38982	13.64	37.89	35.998944%	22,640.32	1,525,122	857,842	2,382,963	2,201,207
371	2 Flanged Check Valve Levers - Rt 66 Pu	2015	4.25	6,774	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	5,955.13	28,790	209,323	238,113	237,097
371	Pump Rebuild - West Kane Pump Statio	2015	4.25	5,517	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	4,849.96	23,447	170,476	193,923	193,096
371	Rebuilt Pump	2015	4.25	1,030	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	905.59	4,378	31,832	36,210	36,055
371	Amp Soft Start - Wilson Run	2015	4.25	4,587	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	4,032.76	19,497	141,752	161,248	160,560
371	IntraLink LC150 Lift Components Wilson	2016	3.25	9,192	R3.0	35.0	9	R3.0009	0.91187	31.92	35.17	90.759170%	8,342.67	29,874	293,412	323,286	321,724
371	Pump Station	2004	15.25	216,996	R3.0	35.0	44	R3.0044	0.58858	20.60	35.85	57.461646%	124,689.19	3,309,181	4,470,107	7,779,289	7,594,843
371	Change Order No. 1	1996	23.25	(58,842)	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	(22,514.96)	(1,368,077)	(847,913)	(2,215,990)	(2,059,470)
371	Change Order No. 2	1996	23.25	5,245	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,007.05	121,954	75,585	197,540	183,587
371	Change Order No. 3	1996	23.25	18,493	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	7,076.13	429,967	266,487	696,454	647,262
371	Change Order No. 4	1996	23.25	5,136	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,965.24	119,414	74,011	193,424	179,762
371	Change Order No. 5	1996	23.25	5,857	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,241.20	136,182	84,404	220,586	205,006
371	Mobilization, Bonds, and Ins	1996	23.25	5,604	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,144.28	130,293	80,754	211,047	196,140
371	Clear and Grub	1996	23.25	2,242	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	857.71	52,117	32,301	84,419	78,456
371	Grade and Seed	1996	23.25	4,287	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,640.38	99,674	61,777	161,451	150,047
371	Access Road and Parking Area	1996	23.25	9,387	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	3,591.67	218,241	135,262	353,503	328,535
371	Chain Link Fence	1996	23.25	12,329	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	4,717.42	286,645	177,658	464,303	431,508
371	Electrical	1996	23.25	27,056	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	10,352.59	629,055	389,879	1,018,933	946,964
371	Precast Structures Complete	1996	23.25	82,051	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	31,395.50	1,907,685	1,182,354	3,090,040	2,871,784
371	Trash Basket	1996	23.25	3,362	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,286.57	78,176	48,452	126,628	117,684
371	Sewage Pumps and Controls	1996	23.25	126,048	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	48,230.25	2,930,615	1,816,351	4,746,967	4,411,679
371	Piping Complete	1996	23.25	38,169	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	14,604.70	887,426	550,013	1,437,439	1,335,909
371	Mobilization, Bonds, and Ins	1996	23.25	5,604	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,144.28	130,293	80,754	211,047	196,140
371	Clear and Grub	1996	23.25	3,362	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,286.57	78,176	48,452	126,628	117,684
371	Grade and Seed	1996	23.25	4,637	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,774.39	107,817	66,824	174,641	162,306
371	Access Road and Parking Area	1996	23.25	16,532	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	6,325.63	384,364	238,223	622,588	578,613
371	Chain Link Fence	1996	23.25	12,819	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	4,905.04	298,045	184,724	482,769	448,670
371	Electrical	1996	23.25	27,067	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	10,356.88	629,315	390,040	1,019,355	947,356
371	Precast Structures Complete	1996	23.25	76,517	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	29,278.02	1,779,021	1,102,610	2,881,631	2,678,096
371	Trash Basket	1996	23.25	3,362	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,286.57	78,176	48,452	126,628	117,684
371	Sewage Pumps and Controls	1996	23.25	126,264	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	48,312.80	2,935,631	1,819,460	4,755,092	4,419,230
371	Piping Complete	1996	23.25	38,598	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	14,768.74	897,393	556,191	1,453,584	1,350,914
371	Mobilization, Bonds, and Ins	1996	23.25	5,604	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,144.28	130,293	80,754	211,047	196,140
371	Clear and Grub	1996	23.25	3,362	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,286.57	78,176	48,452	126,628	117,684
371	Grade and Seed	1996	23.25	6,697	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,562.42	155,700	96,501	252,201	234,387
371	Access Road and Parking Area	1996	23.25	16,252	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	6,218.42	377,850	234,186	612,035	568,806
371	Chain Link Fence	1996	23.25	10,508	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	4,020.53	244,299	151,413	395,712	367,763
371	Electrical	1996	23.25	27,067	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	10,356.88	629,315	390,040	1,019,355	947,356
371	Precast Structures Complete	1996	23.25	94,425	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	36,130.07	2,195,372	1,360,658	3,556,030	3,304,861
371	Comminutor	1996	23.25	43,952	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	16,817.60	1,021,888	633,351	1,655,239	1,538,326

Pennsylvania American Water Company
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Investor-Owned Utility
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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
371	Sewage Pumps and Controls	1996	23.25	126,096	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	48,248.48	2,931,723	1,817,038	4,748,760	4,413,346
371	Piping Complete	1996	23.25	39,732	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	15,202.96	923,777	572,543	1,496,321	1,390,633
371	Mobilization, Bonds, and Ins	1996	23.25	5,604	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,144.28	130,293	80,754	211,047	196,140
371	Clear and Grub	1996	23.25	3,362	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,286.57	78,176	48,452	126,628	117,684
371	Grade and Seed	1996	23.25	7,442	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,847.60	173,029	107,241	280,270	260,474
371	Access Road and Parking Area	1996	23.25	10,171	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	3,891.87	236,482	146,568	383,050	355,994
371	Chain Link Fence	1996	23.25	9,527	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	3,645.28	221,498	137,281	358,779	333,438
371	Electrical	1996	23.25	27,291	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	10,442.65	634,527	393,270	1,027,797	955,202
371	Precast Structures Complete	1996	23.25	89,577	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	34,275.27	2,082,669	1,290,807	3,373,475	3,135,200
371	Trash Basket	1996	23.25	4,049	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,549.24	94,137	58,345	152,481	141,711
371	Sewage Pumps and Controls	1996	23.25	120,934	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	46,273.59	2,811,723	1,742,664	4,554,386	4,232,701
371	Piping Complete	1996	23.25	25,890	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	9,906.58	601,954	373,082	975,035	906,167
371	Mobilization, Bonds, and Ins	1996	23.25	5,604	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,144.28	130,293	80,754	211,047	196,140
371	Clear and Grub	1996	23.25	2,242	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	857.71	52,117	32,301	84,419	78,456
371	Grade and Seed	1996	23.25	4,063	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,554.60	94,462	58,546	153,009	142,202
371	Access Road and Parking Area	1996	23.25	7,706	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,948.39	179,153	111,036	290,189	269,693
371	Chain Link Fence	1996	23.25	10,017	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	3,832.90	232,899	144,347	377,246	350,600
371	Electrical	1996	23.25	27,067	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	10,356.88	629,315	390,040	1,019,355	947,356
371	Precast Structures Complete	1996	23.25	67,416	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	25,795.71	1,567,425	971,466	2,538,891	2,359,564
371	Trash Basket	1996	23.25	4,049	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,549.24	94,137	58,345	152,481	141,711
371	Sewage Pumps and Controls	1996	23.25	123,876	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	47,399.34	2,880,127	1,785,059	4,665,186	4,335,675
371	Piping Complete	1996	23.25	28,819	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	11,026.97	670,032	415,276	1,085,307	1,008,650
371	Mobilization, Bonds, and Ins	1996	23.25	5,604	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	2,144.28	130,293	80,754	211,047	196,140
371	Clear and Grub	1996	23.25	3,362	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	1,286.57	78,176	48,452	126,628	117,684
371	Grade and Seed	1996	23.25	8,840	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	3,382.60	205,537	127,389	332,926	309,411
371	Access Road and Parking Area	1996	23.25	13,590	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	5,199.88	315,961	195,828	511,788	475,640
371	Chain Link Fence	1996	23.25	9,527	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	3,645.28	221,498	137,281	358,779	333,438
371	Electrical	1996	23.25	27,437	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	10,498.40	637,914	395,370	1,033,284	960,301
371	Precast Structures Complete	1996	23.25	83,962	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	32,126.70	1,952,115	1,209,891	3,162,006	2,938,668
371	Comminutor	1996	23.25	43,952	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	16,817.60	1,021,888	633,351	1,655,239	1,538,326
371	Sewage Pumps and Controls	1996	23.25	125,838	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	48,149.84	2,925,729	1,813,323	4,739,052	4,404,324
371	Piping Complete	1996	23.25	39,758	R3.0	35.0	66	R3.0066	0.41185	14.41	37.66	38.263409%	15,212.61	924,364	572,907	1,497,270	1,391,515
371	Pump Station - Wilson Run (Allied Syster	2012	7.25	4,903	R3.0	35.0	21	R3.0021	0.79673	27.89	35.14	79.368241%	3,891.70	35,549	136,754	172,304	171,617
371	Upgrade Lift & Rigg (Atlantic Eastern)	2012	7.25	8,385	R3.0	35.0	21	R3.0021	0.79673	27.89	35.14	79.368241%	6,655.35	60,794	233,869	294,663	293,489
371	Check Valves - Wilson Run (Allied Syster	2013	6.25	6,637	R3.0	35.0	18	R3.0018	0.82519	28.88	35.13	82.208938%	5,456.58	41,484	191,690	233,174	232,311
371	Sludge Pumps	1997	22.25	11,872	R3.0	35.0	64	R3.0064	0.42683	14.94	37.19	40.172089%	4,769.03	264,141	177,360	441,501	415,503
371	Trombold Equip	2001	18.25	62,405	R3.0	35.0	52	R3.0052	0.52142	18.25	36.50	50.000000%	31,202.25	1,138,882	1,138,882	2,277,764	2,184,158
371	Trombold Equipment	2002	17.25	3,534	R3.0	35.0	49	R3.0049	0.54624	19.12	36.37	52.570800%	1,858.07	60,969	67,578	128,547	123,705
371	Submersible Pump	2004	15.25	9,253	R3.0	35.0	44	R3.0044	0.58858	20.60	35.85	57.461646%	5,316.70	141,102	190,604	331,706	323,841
371	Vertical Turbine Pump	2006	13.25	22,381	R3.0	35.0	38	R3.0038	0.64088	22.43	35.68	62.864350%	14,069.80	296,551	502,010	798,561	783,342
371	ABS pump	2006	13.25	8,484	R3.0	35.0	38	R3.0038	0.64088	22.43	35.68	62.864350%	5,333.41	112,413	190,296	302,709	296,940
371	Wilson Run Pump (Kappe Associates)	2012	7.25	14,409	R3.0	35.0	21	R3.0021	0.79673	27.89	35.14	79.368241%	11,436.17	104,465	401,867	506,332	504,315
371	Control Unit & Interface Module - Wilson	2015	4.25	5,194	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	4,565.93	22,074	160,492	182,567	181,788
371	Horse Power Pump	2015	4.25	8,438	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	7,417.36	35,860	260,720	296,580	295,314
371	Sluice Pump	2015	4.25	13,607	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	11,961.60	57,829	420,450	478,279	476,238
371	ABS/Sluzer Pump	2015	4.25	13,607	R3.0	35.0	12	R3.0012	0.88279	30.90	35.15	87.908962%	11,961.60	57,829	420,450	478,279	476,238
371	Pump Station-Jo Jo Road	2002	17.25	15,300	R3.0	35.0	49	R3.0049	0.54624	19.12	36.37	52.570800%	8,043.46	263,929	292,541	556,470	535,509

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
371	Willson Run Pump (Atlantic Eastern)	2012	7.25	3,653	R3.0	35.0	21	R3.0021	0.79673	27.89	35.14	79.368241%	2,899.64	26,487	101,893	128,380	127,869
371	Wilson Run Pump (Kane Lawn & Garder	2012	7.25	3,424	R3.0	35.0	21	R3.0021	0.79673	27.89	35.14	79.368241%	2,717.49	24,823	95,493	120,316	119,837
371	Pumping Equipment			2,443,933									1,046,187	52,359,384	38,845,914	91,205,296	85,537,649
380	Pine St WWTP	1968	51.25	1,596,488	R3.0	45.0	114	R3.0114	0.14500	6.53	57.78	11.301488%	180,426.89	81,820,004	10,425,066	92,245,070	71,841,955
380	Kinzua Rd. WWTP	1968	51.25	1,596,488	R3.0	45.0	114	R3.0114	0.14500	6.53	57.78	11.301488%	180,426.89	81,820,004	10,425,066	92,245,070	71,841,955
380	Membrane Disc	2003	16.25	9,427	R3.0	45.0	36	R3.0036	0.65866	29.64	45.89	64.589235%	6,088.81	153,188	279,416	432,604	424,214
380	Submersible Pump	2004	15.25	5,400	R3.0	45.0	34	R3.0034	0.67660	30.45	45.70	66.630197%	3,598.03	82,350	164,430	246,780	243,000
380	Membrane Discs	2004	15.25	7,200	R3.0	45.0	34	R3.0034	0.67660	30.45	45.70	66.630197%	4,797.37	109,800	219,240	329,040	324,000
380	Transducer Unit	2009	10.25	7,261	R3.0	45.0	23	R3.0023	0.77789	35.01	45.26	77.353071%	5,616.62	74,425	254,208	328,634	326,746
380	Fiberglass Specialties (weir plates/scum l	1995	24.25	2,885	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	1,395.97	69,969	65,583	135,551	129,839
380	Install Temp Chlorine Contact Tank (Exis	1995	24.25	15,738	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	7,614.40	381,647	357,725	739,371	708,210
380	Remove Clarifier Equipment	1995	24.25	5,141	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	2,487.37	124,671	116,857	241,528	231,349
380	Remove Floating Cover, Heat Exchanger	1995	24.25	21,422	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	10,364.47	519,484	486,923	1,006,407	963,992
380	Remove Pumps, Heat Exchanger, Boiler	1995	24.25	2,571	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	1,243.69	62,336	58,428	120,764	115,674
380	Remove Primary Clarifier Equip	1995	24.25	4,286	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	2,073.66	103,935	97,420	201,355	192,869
380	Remove Trickling Filter Equip	1995	24.25	5,141	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	2,487.37	124,671	116,857	241,528	231,349
380	Remove Chlorine Contact Equip	1995	24.25	10,854	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,251.40	263,209	246,711	509,920	488,429
380	Mech. Cleaned Bar Screen	1995	24.25	110,822	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	53,618.10	2,687,427	2,518,978	5,206,406	4,986,979
380	Circ. Grit Removal Unit	1995	24.25	176,213	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	85,255.95	4,273,169	4,005,325	8,278,493	7,929,591
380	Sequential Batch Reactors	1995	24.25	1,453,785	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	703,374.30	35,254,278	33,044,525	68,298,802	65,420,309
380	Positive Displacement Pumps	1995	24.25	72,788	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	35,216.62	1,765,115	1,654,477	3,419,592	3,275,471
380	Vert. Lineshaft Cent. Pumps	1995	24.25	92,592	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	44,798.08	2,245,354	2,104,614	4,349,967	4,166,636
380	Submersible Pumps	1995	24.25	40,919	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	19,797.45	992,281	930,084	1,922,365	1,841,346

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
380	Grinder Pumps	1995	24.25	22,427	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	10,850.53	543,846	509,758	1,053,604	1,009,199
380	Positive Displacement Blwers	1995	24.25	91,280	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	44,163.55	2,213,550	2,074,803	4,288,353	4,107,618
380	Air Diffuser System	1995	24.25	79,306	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	38,370.26	1,923,180	1,802,635	3,725,815	3,568,788
380	Chlorine System	1995	24.25	32,001	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	15,482.62	776,015	727,374	1,503,388	1,440,027
380	Sampler	1995	24.25	12,249	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,926.55	297,048	278,429	575,477	551,223
380	Sluice Gates	1995	24.25	37,929	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	18,350.72	919,768	862,117	1,781,885	1,706,786
380	Air Flor Monitoring Equip.	1995	24.25	32,525	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	15,736.44	788,736	739,298	1,528,034	1,463,634
380	Panel PP3	1995	24.25	6,558	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,172.67	159,019	149,052	308,071	295,088
380	Panel PP1	1995	24.25	6,558	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,172.67	159,019	149,052	308,071	295,088
380	Panel PP2	1995	24.25	6,558	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,172.67	159,019	149,052	308,071	295,088
380	Effluent Water Pump Control Pl	1995	24.25	39,345	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	19,036.01	954,116	894,312	1,848,428	1,770,525
380	Blower Panel	1995	24.25	10,492	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,076.27	254,431	238,483	492,914	472,140
380	Telephone Dialer PL	1995	24.25	9,695	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	4,690.47	235,094	220,358	455,453	436,257
380	Chart Recorder	1995	24.25	7,869	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,807.20	190,823	178,862	369,686	354,105
380	Magnetic Flowmeter	1995	24.25	31,476	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	15,228.81	763,293	715,449	1,478,742	1,416,420
380	Ultrasonic Flowmeter	1995	24.25	10,492	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,076.27	254,431	238,483	492,914	472,140
380	PH Sensor	1995	24.25	10,492	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,076.27	254,431	238,483	492,914	472,140
380	Fiberglass Weirs & Baffles (Chlorine Con	1995	24.25	10,492	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,076.27	254,431	238,483	492,914	472,140
380	Mechanical Bar Screen Mat.	1995	24.25	98,887	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	47,843.84	2,398,012	2,247,704	4,645,716	4,449,920
380	Mechanical Bar Screen Install	1995	24.25	17,574	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	8,502.75	426,172	399,459	825,631	790,835
380	Circ. Grit Removal Unit Mat.	1995	24.25	155,295	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	75,135.14	3,765,897	3,529,849	7,295,746	6,988,262
380	Circ. Grit Removal Unit Install	1995	24.25	36,709	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	17,760.60	890,191	834,393	1,724,584	1,651,900
380	Septage Acceptance Unit - Mat	1995	24.25	167,738	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	81,155.60	4,067,652	3,812,690	7,880,342	7,548,220
380	Septage Acceptance Unit - Install	1995	24.25	26,888	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	13,009.21	652,043	611,173	1,263,216	1,209,977
380	Sequential Batch Reactor - Mat.	1995	24.25	1,293,029	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	625,596.96	31,355,949	29,390,545	60,746,494	58,186,297
380	Sequential Batch Reactor - Install	1995	24.25	233,447	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	112,947.00	5,661,090	5,306,250	10,967,340	10,505,115
380	Positive Displacement Pump-Mat.	1995	24.25	191,807	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	92,800.56	4,651,317	4,359,770	9,011,087	8,631,310

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Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)-0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)	
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
380	Positive Displacement Pump-Install	1995	24.25	32,460	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	15,704.71	787,146	737,807	1,524,953	1,460,683
380	Vert. Lineshaft Center Pumps - Mat.	1995	24.25	79,215	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	38,325.84	1,920,954	1,800,548	3,721,502	3,564,657
380	Vert. Lineshaft Center Pumps - Install	1995	24.25	15,213	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	7,360.59	368,925	345,801	714,726	684,603
380	Submersible Pump - Mat.	1995	24.25	57,244	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	27,696.13	1,388,175	1,301,164	2,689,340	2,575,996
380	Submersible Pump - Install	1995	24.25	14,101	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	6,822.51	341,955	320,521	662,477	634,556
380	Grinder Pumps - Mat.	1995	24.25	18,505	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	8,953.27	448,753	420,625	869,378	832,737
380	Grinder Pumps - Install	1995	24.25	11,135	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,387.19	270,015	253,090	523,105	501,059
380	Belt Filter Press - Mat.	1995	24.25	426,807	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	206,498.85	10,350,062	9,701,316	20,051,378	19,206,301
380	Belt Filter Press - Install	1995	24.25	65,793	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	31,832.02	1,595,473	1,495,468	3,090,942	2,960,672
380	Belt Conveyors - Mat.	1995	24.25	62,215	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	30,101.01	1,508,712	1,414,146	2,922,858	2,799,672
380	Belt Conveyors - Install	1995	24.25	15,688	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	7,590.29	380,438	356,592	737,030	705,967
380	Positive Displacement Blower - Mat.	1995	24.25	94,533	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	45,737.19	2,292,423	2,148,733	4,441,157	4,253,981
380	Positive Displacement Blower - Install	1995	24.25	16,945	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	8,198.18	410,906	385,150	796,056	762,506
380	Chemical Dry Feeders - mat.	1995	24.25	32,788	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	15,863.34	795,097	745,260	1,540,357	1,475,438
380	Chemical Dry Feeders - Install	1995	24.25	6,558	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,172.67	159,019	149,052	308,071	295,088
380	Air Diffusers System - Mat.	1995	24.25	60,329	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	29,188.55	1,462,978	1,371,278	2,834,256	2,714,805
380	Air Diffusers System - Install	1995	24.25	36,197	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	17,513.13	877,787	822,767	1,700,554	1,628,883
380	Polymer Feed System - Mat.	1995	24.25	39,870	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	19,289.83	966,838	906,236	1,873,074	1,794,132
380	Polymer Feed System - Install	1995	24.25	9,967	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	4,822.46	241,709	226,559	468,268	448,533
380	Chlorination System - Mat.	1995	24.25	51,314	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	24,826.77	1,244,358	1,166,362	2,410,720	2,309,119
380	Chlorination System - Install	1995	24.25	12,687	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	6,138.48	307,671	288,386	596,056	570,935
380	Samplers - Mat.	1995	24.25	9,836	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	4,759.00	238,529	223,578	462,107	442,631
380	Samplers - Install	1995	24.25	1,967	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	951.80	47,706	44,716	92,421	88,526
380	Sluice Gates - Mat.	1995	24.25	31,214	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	15,101.90	756,932	709,487	1,466,420	1,404,617
380	Sluice Gates - Install	1995	24.25	4,984	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	2,411.23	120,855	113,280	234,134	224,267
380	Panel PP1	1995	24.25	6,558	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,172.67	159,019	149,052	308,071	295,088
380	Panel PP2	1995	24.25	6,558	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,172.67	159,019	149,052	308,071	295,088

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(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at September 30, 2019 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2019.75-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
380	Panel PP3	1995	24.25	6,558	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,172.67	159,019	149,052	308,071	295,088
380	Effluent Water Pump Control PL	1995	24.25	26,230	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	12,690.67	636,078	596,208	1,232,285	1,180,350
380	Blower Control PL	1995	24.25	10,492	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,076.27	254,431	238,483	492,914	472,140
380	Line Water Control Panel	1995	24.25	5,246	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	2,538.13	127,216	119,242	246,457	236,070
380	WAS Remote Panel	1995	24.25	7,869	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,807.20	190,823	178,862	369,686	354,105
380	Telephone Dialer	1995	24.25	7,869	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,807.20	190,823	178,862	369,686	354,105
380	Chart Recorder	1995	24.25	7,869	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,807.20	190,823	178,862	369,686	354,105
380	Magnetic Flowmeter	1995	24.25	23,607	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	11,421.61	572,470	536,587	1,109,057	1,062,315
380	Ultrasonic Flowmeter	1995	24.25	10,492	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	5,076.27	254,431	238,483	492,914	472,140
380	PH Sensor	1995	24.25	7,869	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	3,807.20	190,823	178,862	369,686	354,105
380	Hand Scanner	1995	24.25	488	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	236.05	11,831	11,090	22,921	21,955
380	Vacuum Truck	1995	24.25	384,794	R3.0	45.0	54	R3.0054	0.50513	22.73	46.98	48.382290%	186,172.20	9,331,257	8,746,370	18,077,627	17,315,735
380	Air Smoke Machine	1999	20.25	4,235	R3.0	45.0	45	R3.0045	0.58001	26.10	46.35	56.310680%	2,384.77	85,759	110,534	196,294	190,576
380	BNR Inc.	2001	18.25	85,726	R3.0	45.0	41	R3.0041	0.61453	27.65	45.90	60.239651%	51,640.95	1,564,497	2,370,319	3,934,816	3,857,663
380	U.S. Filter	2002	17.25	147,788	R3.0	45.0	38	R3.0038	0.64088	28.84	46.09	62.573226%	92,475.67	2,549,342	4,262,204	6,811,545	6,650,456
380	Grit Concentrator	2013	6.25	5,224	R3.0	45.0	14	R3.0014	0.86350	38.86	45.11	86.144979%	4,500.05	32,649	202,997	235,646	235,071
380	(2) Gas Chlorinators	2014	5.25	6,347	R3.0	45.0	12	R3.0012	0.88279	39.73	44.98	88.328146%	5,606.50	33,324	252,180	285,504	285,631
380	Actuator	2016	3.25	4,785	R3.0	45.0	7	R3.0007	0.93135	41.91	45.16	92.803366%	4,440.94	15,552	200,553	216,105	215,339
380	Pitsa Grit 250GPM Concentrator	2016	3.25	4,701	R3.0	45.0	7	R3.0007	0.93135	41.91	45.16	92.803366%	4,363.09	15,280	197,037	212,317	211,564
380	Actuator	2017	2.25	4,899	R3.0	45.0	5	R3.0005	0.95090	42.79	45.04	95.004440%	4,654.03	11,022	209,618	220,640	220,444
380	Controller	2017	2.25	2,524	R3.0	45.0	5	R3.0005	0.95090	42.79	45.04	95.004440%	2,398.34	5,680	108,021	113,701	113,600
380	Pine Street Plant (Allied Systems)	2015	4.25	61,982	R3.0	45.0	9	R3.0009	0.91187	41.03	45.28	90.613958%	56,164.13	263,422	2,543,112	2,806,534	2,789,179
380	Pine Street Plant (SE Dyne)	2015	4.25	2,056	R3.0	45.0	9	R3.0009	0.91187	41.03	45.28	90.613958%	1,863.23	8,739	84,367	93,106	92,530
380	Pine Street Plant (SE Dyne)	2015	4.25	14,731	R3.0	45.0	9	R3.0009	0.91187	41.03	45.28	90.613958%	13,348.71	62,608	604,430	667,038	662,913
380	Pine Street Plant (SE Dyne)	2015	4.25	508	R3.0	45.0	9	R3.0009	0.91187	41.03	45.28	90.613958%	460.59	2,160	20,856	23,016	22,874
380	WWTP Dechlor. Proj.	2002	17.25	37,644	R3.0	45.0	38	R3.0038	0.64088	28.84	46.09	62.573226%	23,555.32	649,366	1,085,664	1,735,030	1,693,998
380	8" valve - Pine St. Plant	2004	15.25	6,665	R3.0	45.0	34	R3.0034	0.67660	30.45	45.70	66.630197%	4,441.20	101,648	202,963	304,611	299,945
380	Air Line Project	2012	7.25	70,500	R3.0	45.0	16	R3.0016	0.84430	37.99	45.24	83.974359%	59,202.32	511,128	2,678,313	3,189,441	3,172,521
380	Actuator & Interface Cards	2016	3.25	14,750	R3.0	45.0	7	R3.0007	0.93135	41.91	45.16	92.803366%	13,688.44	47,937	618,170	666,107	663,747
380	Root Blower (Pine St. WWTP)	2018	1.25	8,747	R3.0	45.0	3	R3.0003	0.97050	43.67	44.92	97.217275%	8,503.11	10,933	381,960	392,893	393,593
380	Area Velocity Analyzer and Logger (Pine	2018	1.25	4,294	R3.0	45.0	3	R3.0003	0.97050	43.67	44.92	97.217275%	4,174.44	5,367	187,516	192,883	193,227
380	Area Velocity Probe and Appurtenances	2018	1.25	1,780	R3.0	45.0	3	R3.0003	0.97050	43.67	44.92	97.217275%	1,730.15	2,225	77,718	79,943	80,085
380	Wastewater and Disposal Equipment			10,126,486									3,843,952	325,586,007	183,963,770	509,549,779	455,691,864
381	Lever & Weight Swing Check Valve - Kin	2016	3.25	4,184	R3.0	45.0	7	R3.0007	0.93135	41.91	45.16	92.803366%	3,883.14	13,599	175,363	188,962	188,292